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Teachers College RECORD

Volume XXVI, Number 8 April, 1925

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Bureau of Publications
Teachers College, Columbia University
New York City

$2.50 a Year Ten Numbers a Year $0.30 a Copy

TEACHERS COLLEGE RECORD

VOL. XXVI, No. 8 APRIL, 1925

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THE TEACHERS COLLEGE RECORD is issued ten times a year, monthly except July and August. The subscription price is $2.50 per year; foreign postage, 50 cents; Canadian postage, 30 cents. Single numbers are 30 cents each, postpaid.

A list of the back numbers of THE RECORD will be sent on request.

Make money orders payable to TEACHERS COLLEGE and address all orders to TEACHERS COLLEGE RECORD, 525 WEST 120TH STREET, NEW YORK.

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Entered as second class matter at the New York, N. Y., Post Office, June 11, 1900, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on August 6, 1918.

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TEACHERS COLLEGE RECORD

VOL. XXVI APRIL, 1925 No. 8

THE INFLUENCE OF STANDARDIZED TESTS ON THE CURRICULUM IN ARITHMETIC *

By CLIFFORD B. UPTON

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With the beginnings of experimental education and research in educational psychology a movement started which has had considerable influence on the teaching of arithmetic. Out of this movement grew the standardized tests in arithmetic as we find them to-day. We have had considerable assistance from these tests and more or less harm; it is the harm that comes from them that I wish to discuss in this paper. Unfortunately teachers the country over, being unfamiliar in general with the larger developments in the teaching of arithmetic, have looked upon the standardized test in arithmetic as a kind of authoritative guide as to what should be done in the teaching of this subject. From their viewpoint, the arithmetic they had taught was good if the pupil succeeded in passing a standardized test; otherwise the subject matter and the teaching were poor. Consequently teachers have come to regard many of these tests as outlines of the minimum essentials in number work and therefore guides to the particular topics which should be given most emphasis. This is, however, not the case.

Many of these tests were prepared by those who had little familiarity with the larger problems in the teaching of arithmetic and who had given no particular study to an evaluation of its subject matter before undertaking their work. Certain of the authors of these tests did possess, however, a thorough familiarity with statistical technique as applied to educational problems which they hastened to adapt to arithmetic without carefully selecting in advance the problems to which they applied it. The result is that these standardized tests contain considerable material which is not representative of the best practice in the teaching of arithmetic, which tends to standardize topics which should not be

* An address delivered at the meeting of the National Council of Teachers of Mathematics at Cincinnati on February 21, 1925.

taught, and which consequently handicaps certain efforts to reorganize the curriculum in this subject along modern lines.

Recently I asked a teacher of the fifth grade what denominate numbers she was teaching and she replied, "Only those which are found in the ——— Test which our pupils are given twice a year." Thus this test became her authoritative curriculum so far as denominate numbers were concerned, limiting her work to the adding of feet and inches, and years and months. I then asked her what she was doing in mensuration, such as finding areas, and she replied, "Very little, because the tests don't include such work."

Before entering upon the details of this paper I wish to say that the testing movement has made a definite contribution to the teaching of arithmetic in supplying ideas about standards of attainment and the means of measuring the progress of pupils which had not previously been available. Had it been possible from the beginning for test makers to have worked together with those who had specialized in the teaching of arithmetic, many of the mistakes would have been avoided that must now be corrected. But all new movements develop in this uneconomical way, mistakes being noted and corrected only after extended experience. Having passed through the period of adolescence we may now reasonably expect the testing movement in arithmetic to give us much more sane and efficient service in the near future.

In addition to the various standardized tests in arithmetic, I shall include in this discussion the better known practice exercises in this subject as well as the more important intelligence and achievement tests which have incorporated problems in arithmetic.

Let us first take the topic of addition as we find it in these various tests. There seems to be no uniformity whatever as to the degree of difficulty which an addition problem should possess. In one of these tests the goal seems to be the ability to add 9 numbers of 3 orders each as shown in Example 1. In another test the goal is increased to 16 addends as in Example 2. One of the practice exercises gives 13 addends of 6 orders each as in Example 3, while another gives 14 addends of 3 orders each as shown in Example 4. Numerous variations of the first four examples are found in other tests. At the other extreme one of the achievement tests considers Example 5 the final goal in addition. Evidently the authors of this particular test like them fat rather than lean. It goes without saying that the standards represented by these five examples cannot all be right.

In order to relieve eyestrain it is customary in business practice to

use commas to separate large numbers into groups of three figures each, as in this number: 226,315. It should be noted in Examples 3 and 5 that this practice has not been followed, thus giving the eye no resting point whatever. It would have been preferable in Example 3 to have

1.	2.	3.	4.	5.
927	.49	226315	916	791529572
379	.28	841682	699	865280183
756	.63	657159	974	437643359
837	.95	840445	473	
924	1.69	571145	134	
110	.22	642735	855	
854	.33	178068	581	
965	.36	376370	768	
344	1.01	911917	586	
	.56	745523	893	
	.88	189933	135	
	.75	458671	624	
	.56	310367	328	
	1.10		535	
	.18			
	.56			

had the numbers represent dollars and cents, thus bringing this exercise more in harmony with conditions outside the school room.

The question of proper standards is still further complicated by the fact that certain practice exercises are giving a great amount of emphasis to problems which involve considerable irregularity of outline, such as Example 6. In such extremes as this we must remember that we are subjecting pupils to a great amount of nerve and eyestrain to keep the numbers in their proper columns, a strain which we do not impose even upon an expert bookkeeper who always writes such numbers in account books which are especially ruled so that the figures easily follow in straight columns. If an exercise like Example 6 is included in a test, it would be far more sensible to write it as shown in Example 7, where the addends are dollars and cents.

6.	7.
3738	$37.38
634	6.34
59399	593.99
964	9.64
42	.42
825585	8255.85
407	4.07
52	.52
513	5.13

When it comes to the addition of decimals the situation is still more complicated. We find the following as examples of this complication:

8. $33 + .0033 + 330000 + 33.33$
9. $4.833 + 17\frac{1}{2} + 3\frac{2}{5} + 21.9$
10. $.14 + .8\frac{4}{5} + .5\frac{7}{8}$
11. $0.14 + 0.8\frac{4}{5} + 0.5\frac{7}{8}$

I know of no situations in practical life which justify such extremes as Example 8 and still less a problem like Example 9. If by any possibility a problem like Example 9 actually existed it would be the result of measurements of some sort, but it is very difficult to conceive of any form of measuring which would be constantly mixing common and decimal fractions. While Example 9 is bad, Example 10 is infinitely worse, and is certainly a product of the imagination rather than a problem from any actual life situation. Yet the teacher whose pupils have once been given a test which incorporates Examples 8 and 9, or the test which gives Example 10, will ever after drill upon that sort of material to make certain that her pupils will make a good record.

It should be noted that if Example 10 were a real problem it would represent the sum of three measurements of some kind and it would be written by a careful computer as shown in Example 11, a zero being placed before each decimal point to make certain that the decimal point would not be overlooked. The importance of such a practice is readily appreciated by an illustration from the field of medicine. A physician, prescribing a powerful medicine in terms of metric units, as is often done, would always indicate the dose by writing 0.25 grams instead of .25 grams, the zero serving to call attention to the decimal point in case it is written indistinctly. In a situation like this it would be very serious to give 25 grams of a certain medicine when only 0.25 grams was intended. Example 10 is, therefore, not only a fictitious problem but it is written carelessly as well.

Examples 12 and 13, which are taken from two prominent tests, are still more puzzling since they represent a form of writing the addition of decimals which is never found in practice. It is evident that Example 12 does not represent the addition of dollars and cents. The same may be said of Example 13, since in all ordinary commercial addition, such as the making out of bills, the fractions of a cent are not accumulated as would be indicated if the items in Example 13 were money. In such cases a fraction of a cent equal to $\frac{1}{2}$ or more is always counted as an additional cent, while fractions less than $\frac{1}{2}$ are dropped.

The only situations where one finds calculations involving money carried to more than two decimal places are in highly technical computa-

12.	13.	14.
113.46	37.846	113.4600
49.6097	1.02	49.6097
19.9	8.109	19.9000
9.87	70.61	9.8700
.0086		.0086
18.253		18.2530
6.04		6.0400

tions such as are found in cost accounting, in the calculation of tax rates, or in quotations on foreign money, in which cases *all* items in the same problem are carried out to the *same* number of decimal places. If Example 12 represented such a situation, it would then be written as shown in Example 14. I should add, however, that the addition of money items carried out to several decimal places is a far less frequent operation than the multiplication or division of such items, and in offices where such extensive calculations with decimals occur, the calculating machine is usually employed.

Examples 12 and 13 are equally objectionable if we consider them as representing measurements of length, weight, area, or volume, instead of money. Any of these is an extreme possibility, since our units of measure are not divided decimally, and since the metric system is not generally used in this country. The modern surveyor, however, sometimes uses a steel tape in which the foot is divided decimally, while in the physical laboratory or in the U. S. Coast and Geodetic Survey we often find measurements carried out to four or more decimal places; but in all these situations the important thing to remember is that in a given problem all measurements are made with the same degree of accuracy and, consequently, are recorded with the same number of decimal places. Hence, if Example 12 represented such measurements, it would be written as shown in Example 14. If a scientist in measuring two copper plates correct to thousandths of an inch found the thickness of one to be exactly 0.4 in. and that of the other to be 0.372 in., he would record his first measurement as 0.400 to make clear that in his measurement he had not ignored the second and third decimal places. It is just as important for him to record *each* of his measurements to three decimal places as it

is for us always to use two decimal places in writing cents. We could write \$7.60 as \$7.6, but to save all question about the second decimal place we always write it as \$7.60. Examples 12 and 13, therefore, are not representative of real conditions either in computation or in scientific measurement.

The most likely situation that occurs to me which would involve the addition of decimals of various orders is that which would arise if one should add several mixed numbers, such as $4\frac{1}{4} + 6\frac{1}{2} + 3\frac{1}{8}$, by reducing them to decimals, as shown in Example 15, but even in such a case a careful computer would not omit the zeros but would write them as in Example 16.

15.	16.
4.25	4.250
6.5	6.500
3.125	3.125

At this point I wish to stop a moment to speak of the subject of checking so far as the operation of addition is concerned. The practical way to check addition is to add each column in the opposite direction. This is the way addition is checked in life by all practical computers. Yet one of the prominent practice exercises tells the pupil to check his addition as follows:

\$1.10	First find the sum of the		Add parts of the numbers
\$2.85	first 4 numbers which is..	\$14.12	and write the sum.
\$3.75			
\$6.42	Then find the sum of the		Add the rest of the num-
\$1.49	rest of the numbers which		bers and write the sum.
\$2.25	is	\$11.24	
\$7.50			
\$25.36	The sum of all the num-		Then add these 2 sums.
	bers is	\$25.36	

Such a practice is indefensible. It should also be noted in this particular example that the \$ sign is repeated with each addend, a practice found nowhere in life.

It is of special interest to note that none of the tests tell the pupil to check at all. In fact, they all give time standards which make it impossible for the child to check and finish the work within the time assigned. In other words, every standardized test in arithmetic to-day encourages the practice of not checking problems in addition by forcing standards upon us which make checking impossible. This is quite contrary to life because in all modern business practice, even where adding

machines are used, checking is constantly in evidence. The world is not absolutely sure of its results after a single working of a problem. Business men would soon be ruined if bids, estimates, and contracts were not most carefully checked. No one but an educator, who knows little about modern business practices in arithmetic, would venture to depend upon his results after a single working of a problem. It is certainly high time for us seriously to consider whether all time standards in modern tests should not be revised to make allowance for checking. Such a revision would require all standards to be based upon an accuracy of 100%, as they should be.

Passing to subtraction we find a similar wide variation in standards of difficulty. One achievement test is quite satisfied with Example 17 as the maximum accomplishment. A prominent intelligence test suggests Example 18, while two of the standardized arithmetic tests contribute Examples 19 and 20. Certainly Example 17 is too simple for

17.	18.	19.	20.
971	37344	107795491	80836465
536	14853	77197029	49178036

pupils beyond the third grade and undoubtedly Examples 19 and 20 are too extreme for pupils anywhere in the elementary school. It should be observed that the comma used to separate a large number into periods has been omitted in Examples 18, 19, and 20, an omission similarly noted in certain addition problems above.

When we come to the subtraction of decimals the situation is still worse. One of the arithmetic tests asks the pupil to subtract Example 21, which is purely an imaginary problem, since in practice decimal and

21.

$$5704.3\tfrac{5}{6} - 695.71$$

common fractions are not combined as here indicated. One of the intelligence tests, which has a very reasonable standard in addition,

22.	23.
$9.2 - 3.00061$	$9.4 - 4.00083$

jumps to Examples 22 and 23 for subtraction. These particular problems are artificial for the same reasons given above in discussing the

examples on the addition of decimals. If the subtrahend is carried to five decimal places, as it would be only in most delicate scientific measurements, then the minuend should be carried out to the same number of places. A form of subtraction somewhat similar to that shown in Examples 22 and 23 occurs in finding the cologarithm of a number, but even there the zeros are understood in the minuend and would be inserted by a careful computer in the case of written work, though cologarithms are usually found mentally.

From my knowledge of computation as found in life I believe that for the great majority of people subtraction involving three decimal places will be quite sufficient. How is any teacher to keep her balance when presumably authoritative tests give problems like the above!

No test makes any provision for checking subtraction and does not allow time for it even if it were desired.

Turning to multiplication, we find there is like variation in the problems. One standardized test gives Example 24 as its notion of the maxi-

24.	25.	26.	27.
8246	9402875	904753	3037
29	842	3679	3

mum difficulty in multiplication, while certain practice exercises increase the limits to Examples 25 and 26. At the other extreme we find a prominent intelligence test quite satisfied with a single multiplier as in Example 27. If the reader will try to find a problem in real life which requires the multiplication of numbers such as are found in Examples 25 and 26 he will search many hours before he finds one that is really satisfactory, if he finds it at all. Such problems make us feel that the authors are advocates of the theory of formal discipline in its most extreme form.

When it comes to the multiplication of decimals we find many puzzles for the conscientious teacher who is seeking to improve her work. One test writes its multiplication problem as shown in Example 28, taking particular care to have the decimal points come one under the other. What havoc it would raise in the school room if all multiplication were done in this way. It would be of interest to know just how children place the partial products when they solve this particular problem. Another test

28.
53.81
2.1

built by a statistician expects the pupil to multiply as in Example 29. It would be extremely interesting to know if this statistician ever in his life met a practical problem which involved anything like the computations represented in Example 29, and if he did, if he got the right answer the first time he worked it. What a waste of time to expect us to teach problems like this!

29.

$.0963\frac{1}{8}$
$.084$

When we consider the multiplication of mixed numbers we find that three prominent tests have problems like Example 30, where the multiplicand is the mixed number and the multiplier a whole number. Nowhere in these particular tests does the more frequent problem appear where the multiplier is a mixed number. If we were asked to find the cost of 6 packages of crackers at $12\frac{1}{2}¢$ each we would have a typical life problem where the multiplicand is a mixed number; but this situation arises much less often than problems like the following where the multiplier is a mixed number: Find the cost of $5\frac{3}{4}$ pounds of chicken at 48¢ a pound, or the cost of $2\frac{1}{2}$ yards of ribbon at 30¢ a yard. When standardized tests reverse actual conditions in this way how can we expect teachers, who do not understand these matters, to know what relative emphasis should be given these two topics?

30.

$358\frac{1}{3}$
26

Turning to one of the tests which does give a mixed number as a multiplier we find the extreme case illustrated in Example 31, which is, of course, of theoretical rather than of practical interest. Further along in the same test we find an exercise like Example 32, which is equally extreme, representing an almost impossible combination of decimal and common fractions. This same test, apparently to destroy all efforts at good teaching, then gives the problems shown in Example 33, in each of which the multiplier is made a concrete number. What teacher is there who hasn't worked for hours making clear to the child that the multiplier must always be an abstract number, only to have a test like this come along and ruin it all!

31.

6.48
$.26\frac{2}{3}$

32.

$.07\frac{3}{8} \times 16\frac{2}{3}$

33.

$2\frac{1}{2}$ in. $\times$ 24 = how many feet?
$12\frac{1}{2}¢$ $\times 1600 = ?$
$25\frac{3}{4}¢$ $\times 1500 = ?$

When it comes to the checking of multiplication we find one of the practice exercises advocating the method here shown. Such a method is of course wholly impractical with a multiplier like 9, and is never used in life. The most practical way to check multiplication is to do the work over again or to interchange the multiplier and multiplicand and multiply a second time. The device known as "casting out nines" is also serviceable. As in the problems in addition and subtraction, none of the standard tests provide time for the checking of problems in multiplication.

34	34
9	34
306	34
	34
	34
306 is	34
right, for	34
9 34's	34
added =	34
	306

Turning to division a great majority of the tests and practice exercises print their problems in short division so that the quotient shall be written above the dividend. Anyone familiar with practical computation knows that it is extremely inconvenient to write the quotient above the dividend in short division. The only possible excuse anyone has for doing it is to harmonize the schoolroom practice in short division with that in long division; but in life we find that there are other far more important considerations that prompt us to write the quotient below the dividend rather than above it, and we are never worried or inconvenienced there by the fact that the quotient is written *above* in long division and *below* in short division. Let us review for a moment those situations in life where we have to use short division. There are three such prominent situations.

1. The first use of short division is that made in finding the fractional part of a number such as finding ¾ of $2.76. If we work this problem by multiplying first by 3 and then dividing by 4, the easiest way to do it is as shown in Example 34. On the other hand, if we first divide by 4, and then multiply by 3, the work is most conveniently done as in Example 35. In both cases we have actually saved time by writing the quotient *below* the dividend. It is of interest that on several occasions I have asked groups of teachers to show me how they work this particular problem. Invariably they write the quotient below as has been done here, though in their teaching they put the quotient above.

34.	35.
2.76	4)2.76
3	.69
4)8.28	3
2.07	2.07

2. The second prominent use of short division is in finding averages as shown in Example 36. Again we find it more convenient to write the quotient below the dividend. If we do not write the quotient below when we divide by 3, then we must rewrite the sum, 158, before dividing.

3. The third prominent use of short division is in finding discounts as in this problem: If the list price is $4.80 and a discount of 25% is allowed, what is the net price? The shortest solution of this problem is that given in Example 37, where we write the quotient below the dividend, thus bringing 1.20 in a convenient position to be subtracted from 4.80, which gives the net price, $3.60.

36.	37.
87	4)4.80
43	1.20
28	3.60
3)158	
$52\frac{2}{3}$	

It is thus seen that in each of the above cases time is saved by writing the quotient below the dividend in short division. A further advantage in writing the quotient *below* is found in checking short division. For example, in finding $\frac{1}{3}$ of $7.92 we should make certain that $2.64 is the correct quotient by multiplying it by 3, this operation being facilitated by writing the quotient below the dividend. We had made some progress in this country in getting teachers and pupils to write the quotient below until the standardized tests commenced to be circulated widely. One of the most prominent authorities on arithmetic in this country told me recently that he was finding more and more of a tendency on the part of teachers to write the quotient above the dividend. I attribute this tendency wholly to the influence of the various standardized tests in arithmetic, in this case an extremely unfortunate influence.

Let us now consider the subject of long division, in which there is no agreement whatever in the various tests as to the size of the dividend and divisor. In one standardized test Example 38 is representative of

38.	39.	40.	41.	42.
68)43520	4927)1896895	358)291412	17)359	48)1536

the maximum difficulty of the exercises in division, while the practice exercises present problems as complicated as those illustrated by Examples 39 and 40. At the other extreme we find certain achievement tests satisfied with exercises as simple as those shown in Examples 41 and 42. Certainly there must be a happy medium.

Fortunately the various tests do not give such extreme exercises in the division of decimals as were found in multiplication. Examples 43 and

43. $\$12 \div 6\frac{1}{4}¢$ 44. $27.58 \div \frac{7}{8}$

44 are taken, however, from two of the tests and represent computations that probably occur nowhere in practical life.

When it comes to the checking of long division we find one of the practice exercises advocating the following method:

$$\begin{array}{r} 20005 \\ \hline 15)300075 \end{array}$$

Check by multiplying as follows:

$$\begin{array}{r} 15 \\ 20005 \\ \hline 75 \\ 30 \\ \hline 300075 \end{array}$$

Just how the pupil is to get the proper position for the partial products is not explained, and in all probability in practice this skill is never acquired. It goes without saying that such extremes as this should have no place in any course of study.

In examining the exercises in common fractions in the various tests we find such specimens as are shown in Examples 45, 46, 47, and 48, in which fractions with denominators like 7, 14, 5, 9, and 18 are given

45. $\frac{1}{7} + \frac{1}{14} + \frac{3}{14}$
46. $\frac{6}{7} - \frac{4}{5}$
47. $\frac{3}{6} + \frac{4}{12}$
48. $17\frac{1}{18} + \frac{2}{3} + \frac{5}{9} + \frac{1}{6} + \frac{1}{2}$

preference to those with the much more commonly used denominators such as 2, 4, and 8. If one should compare these problems with the two thousand cases of fractions given by Professor Guy M. Wilson in his book on *Social and Business Usage in Arithmetic,* one's general conclusion would be that such situations, as are suggested by these four examples, probably do not arise practically once in a million times. It should also be noted in these four examples and in Examples 49 and 50 given below that considerable prominence is given in all the tests to the

49. $\frac{1}{8} + \frac{1}{4} + \frac{1}{2}$ 50. $\frac{3}{8} + \frac{5}{8} + \frac{7}{8} + \frac{1}{8}$

writing of common fractions in the horizontal form, whereas the most frequent life need is to add fractions in the vertical form. We must re-

member that most of the fractions we have to add occur in mixed numbers, as shown in Example 51, and that these are most conveniently added when placed one under the other. When the standardized tests give so much prominence to the horizontal writing of fractions it forces the teacher to give considerable drill on the adding of fractions in this form, thus reducing the attention needed for the vertical form. Only recently a group of teachers told me that they were forced to spend a great deal of time on the horizontal form in order that their pupils would be successful in getting a good rating in these tests.

51.

$3\frac{1}{4}$
$2\frac{5}{8}$

In certain tests a further difficulty in fractions comes from very poor typesetting. For example, in a mixed number like $5\frac{7}{8}$ the 7 is printed almost the same size as the 5 and is written so close to it that the pupil easily misreads it as $^{5}7/_{8}$.

The textbooks in arithmetic now used in this country have already done much to simplify the teaching of common fractions and the good example they have set would be far more effective than it is now if the testing movement would only come to its senses in these matters. It is really surprising how little the great majority of people need to know of common fractions for the practical affairs of life. If any prominent city in this country would adopt a course of study in which the subject of common fractions was reduced to its barest essentials and would faithfully follow it for a period of years we would find that such an experiment would have very wide influence. Gradually other courses of study would accept a similar standard and before long we would have the millennium so far as the teaching of common fractions is concerned. And with that would come the greatest relief of all, for many of the arithmetic tests now in use would die, as they should, from inanition.

Among a few of the miscellaneous peculiarities found in these tests is a problem such as is shown in Example 52. Undoubtedly this problem was given to test the child's knowledge of the fractional equivalents of certain per cents, expecting him to remember that $6\frac{1}{4}\%$ of 80 is the same as $\frac{1}{16}$ of 80, or 5. While it is quite worth while to have pupils know that $16\frac{2}{3}\%$ of anything is the same as $\frac{1}{6}$ of it and that $12\frac{1}{2}\%$ is the same as $\frac{1}{8}$, I doubt extremely the value of forcing children to remember that $6\frac{1}{4}\%$ is the same as $\frac{1}{16}$, yet the particular test in question gives only this exceptional form.

52.

Find $6\frac{1}{4}\%$ of 80

In the field of denominate numbers one test gives the oddity illustrated in Example 53. I can think of no life situation where we would

53.

$1\frac{1}{8}$ yd. + 1.2 ft. = ? inches

measure yards in terms of common fractions and feet in terms of decimal fractions. If we had the foot divided into tenths, as a surveyor sometimes does, then we never would have any occasion to add $1\frac{1}{8}$ yd. to 1.2 ft. because the rest of the measurement would also be expressed decimally. In a dry-goods store where the yard is measured in eighths, one would never find a foot marked in tenths. Such a problem is purely fictitious.

I should call attention to the fact that the tests which I have reviewed in this article have included only those which deal with the abstract operations with whole numbers, fractions, and decimals, because the most prominent tests in arithmetic limit their exercises to this field, some of them confining the work to whole numbers alone. I have not touched upon the so-called reasoning or problem tests which treat of the applied problems of arithmetic, since these tests are not widely used and such of them as we have are not satisfactory.[1] This means that practically all the formal measurement of arithmetic now done by means of standardized tests is confined to the abstract operations. Little or no attention is given to a corresponding testing of the pupil's ability to solve problems. The effect of this on the present teaching of arithmetic is apparent. Abstract work is greatly emphasized in the schools where standardized tests are given, while work in problem solving is more or less neglected. Hence we find in many school rooms to-day a lack of a proper balance between abstract and concrete work that is to a great extent the result of a one-sided development of the testing movement in arithmetic.

In conclusion let me say that the illustrations which have been given in this article are selected from the best-known and most widely used tests and scales on the market to-day, the total circulation of which reaches many million copies per year. When I say that these measuring devices are a great influence upon our curriculum in arithmetic I am not speaking lightly. Whether the unusual topics found in many of

[1] For a discussion of the difficulties in making a satisfactory reasoning or problem test in arithmetic see the author's article on Standardized Tests in Mathematics in the Report of the National Committee on Mathematical Requirements, entitled *The Reorganization of Mathematics in Secondary Education*, Chapter XIII, pp. 307-16.

these tests actually appear in the printed courses of study of our many towns and cities is of relatively little moment because these topics *are* taught whether they appear in the curricula or not, and the reason they are taught is because teachers know that they and their schools are judged in no small measure by the rating their pupils obtain on examinations of this sort. What a pity this is when we really have no test in arithmetic to-day which is a sane and adequate measure of good teaching in this subject. Such tests as we have are greatly influencing our teachers to give an undue emphasis to abstract work and they are also forcing into our teaching many fictitious and extreme problems. A number of topics which it would be desirable to test have not been included at all. Apparently many of these tests were prepared with little appreciation of the kind of arithmetic that is actually used in this busy world of ours.

In seeking to find the philosophy of education underlying many of these tests one is reminded of the statement of that keen observer, Mr. Dooley, who said, "It doesn't make much diff'rence what ye teach a boy so long as he doesn't like it." Had the battery of modern arithmetic tests come under Mr. Dooley's observation I am sure he would have remarked, "It doesn't make much diff'rence what ye put in a test so long as it is somethin' that no wan iver uses." When the time comes that most of the present tests are replaced by others which contain problems that some one *does* use in the quantitative affairs of life, we will then have a great force, far more effective than most of us now realize, to assist in simplifying the curriculum in the oldest of all school subjects, arithmetic.

THE PUBLIC SCHOOL SYSTEM AS A SELECTIVE AGENCY FUNCTIONING AS GUIDANCE

By ARTHUR F. PAYNE

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There has been, of course, much discussion and consideration of the public school system as a device for educating large groups of human beings, but there has been comparatively little discussion or consideration of the public school system as a device for selecting and conserving or selecting and rejecting certain types of students, or students with or without certain capacities, traits, qualities and aptitudes. The time has arrived when we must pay an increasingly large measure of attention to the public school as a device which automatically functions in the selection and segregation of specified groups from the great mass of students as they enter and make progress in these schools. The following chart presents in diagram form some of the factors in our public school system which function in this selective process.

Under A in the chart are listed the school units found in the entire public school system, ranging from the kindergarten to the graduate

THE CURRICULUM AS A SELECTIVE AGENCY FUNCTIONING AS GUIDANCE

A School Units	B Subjects, Standards, Requirements	C Individual Mental Factors	D Factors of Environment and Heredity
I. KINDERGARTENS	Age Cleanliness Discrimination of form, sound, color Social activities Coöperation	High I.Q. not important Stability of behavior Docility Imagination Observation	Distance from school Overcrowding Climate Attitude of parents
II. GRADES 1 TO 6	Vaccination Oral reading Phonetics Mechanical number operations Arithmetic — 45 combinations Technical grammar	Low I.Q. eliminated Abnormal behavior cases eliminated Memory Attention Obedience Control	Very few factors because of the compulsory feature Physical vitality Migratory habits of family

THE CURRICULUM AS A SELECTIVE AGENCY FUNCTIONING AS GUIDANCE—*Continued*

A School Units	B Subjects, Standards, Requirements	C Individual Mental Factors	D Factors of Environment and Heredity
III. Junior High Schools	Silent reading Composition Mathematical reasoning Logical thinking Intensification of mental processes	I.Q. below 80 begins to be eliminated Special aptitudes Life-career motive Instability or abnormal behavior of any kind	Economic status of family Community attitudes towards try-out courses, extra-curricular activities
IV. Senior High Schools Selection on the basis of special-type high school and special curricula offerings.	Much depends on diversification and flexibility of courses Standards set by local or state boards of education or college entrance board Foreign languages Science Mathematics English Social attitudes	I.Q. below 100 eliminated Ability to form judgments Stable behavior Literary-minded Mathematical-minded	Physical vigor Appearance Race Traditions of the community in regard to high schools Local labor conditions Location of schools Transportation Tuition and expenses
V. Colleges Selection on the basis of: Special-type colleges, special curricula offerings and varying entrance requirements. Geographical, racial, social, intelligence and scholarship quotas Character certificate Religious requirements Scholarships and endowments	Foreign languages Mathematics English Science Choice of "snap" course and "easy" professors	High I.Q.—100 Habits of study without supervision Industry Self-control Religion	Economic status Family traditions Location of school
VI. Graduate Schools Selection on the basis of: Previous success and training Special types and special offerings	Mental tests Scholarship tests Foreign languages Science Mathematics Capacity for research, original thinking, and initiative Scholarship tradition	High I.Q.—110 Analytical perception Synthesis Special interests and aptitudes carry over completely into definite service and contribution	Economic status Location of school

school. These are divided into six distinct levels: (1) the kindergarten, (2) the elementary grades, (3) the junior high schools, (4) the senior high schools, (5) the colleges, and (6) the graduate schools. Opposite each of these six school units we have the approximate factors which tend to select and conserve, or to select and reject, students on the basis of the possession or non-possession or degree of effectiveness of certain capacities and abilities.

There is no question but that in the past the public school system has functioned as a selective device which worked very effectively, although largely unconsciously. The type of person for which the public school system was designed was the literary and verbal-minded individual, with a high level of intelligence, whose economic and social status was high. In the earlier years of our school system these individuals were directly headed for the vocational objective of entrance to the ministry. Later, the objectives of entrance to the professions of law and medicine were added; still later, those of entrance to the professions of teaching and engineering. This process of accretion has continued until at the present time we have the rich and diversified offerings of the modern state university as exemplified in its schools of theology, law, medicine, pharmacy, dentistry, architecture, civil, mechanical, electrical, chemical, structural, and industrial engineering, mining and ceramic engineering, the specialized professions to be found in the general field of agriculture, and the specialized branches in the wide field of education. More courses are being added with each new issue of the university catalogues.

This increasing richness and diversification of the offerings of the university is extending downward to the senior and junior high school. Whereas in the past, and in the majority of high schools at present, the offering has been and now is a single curriculum with the objective of entrance to the university, we have, in a slowly but steadily increasing number of senior high schools, diversified curricula, such as college-preparatory, scientific, classical, the English course, the industrial arts course, the household arts course, the normal course, the commercial course, only some of which may prepare specifically for entrance to college. At the present time this tendency toward diversification in the high schools has reached the stage where we now have special-type high schools, such as commercial, technical, vocational, English, etc., although it is a question how many of these schools hold true to their names.

The same situation holds in regard to the approximately twelve hundred junior high schools in this country to-day. These junior high schools are presumably definitely organized on the basis of diversified offerings

to meet the demands of individual differences and needs, and the varying demands of our social order. The usual organization of the junior high school is on the basis of curricula, such as academic, commercial, household arts, industrial arts. The larger, more modern junior high schools have other offerings, such as the fine arts course, the music course, and the agricultural arts course. Wherever it does not seem feasible to organize a separate junior high school, we now have the departmental system in the sixth, seventh, and eighth grades of the elementary school, each subject being taught by a specially trained teacher who teaches one or two subjects as a specialty.

All of this system functions as education, but to exactly what degree, or just how purposive it is, or how much of it is actually used by various individuals in later carrying their own economic load, or how much of it functions in satisfying the needs of society, is a question concerning which there is little common agreement. But to any student of educational and vocational guidance there can be no doubt in regard to the large measure in which our public school system, as organized in the past and as organized at present, has and does function as a selective agency of the highest degree of effectiveness, with all of this selection functioning as guidance by selection and rejection.

Under B of the chart, "Subjects, Standards, and Requirements," we must first of all recognize that ability in English, and in reading, writing and spelling functions as a selective device in the first three grades. In these same grades personal control, sociability, and general behavior also function as selective devices.

In Grades 4, 5, and 6, the outstanding subject functioning as a selective device is arithmetic, with grammar a close second. Only those who have the capacity to master formalized work in English, handwriting, reading, spelling, arithmetic, and formal grammar to the satisfaction of the school authorities, and at the same time have the personal characteristics which enable them to work in close contact with large groups of like individuals, can ever hope to make progress through our elementary school system up to the sixth grade.

In the three years of the junior high school there is a selection on the basis of ability to perform certain other forms and kinds of school work. Those children who cannot do the language work or the mathematical work soon find themselves in the household arts course or in the industrial arts course. They are not encouraged to consider going on to college. Conversely, those students who have abilities along the lines of the verbal subjects or the mathematical subjects are encouraged to

enter the science or academic courses. Students who must leave school early find themselves either in the commercial course, the household arts course, or the industrial arts course.

In the senior high school, with the highly selected group which comprises that student body, we find more selection. The boy who has a capacity for mathematics is urged to take the scientific course, with the objective of entrance to a college of engineering. The girl with the same capacity is encouraged to become a teacher of mathematics. The girl who must leave school quite soon takes a nursing or a commercial course; the girl who can remain to graduate, but who cannot go to college, is urged to consider the normal course. The girl who belongs to the upper social and economic levels takes the English, academic, classical, or college-preparatory course with the objective of going to some woman's college or to some one of the numerous finishing schools. Conversely, those students who do not have the special capacities required for these courses are automatically eliminated from them.

The same problem arises in the college or the university. In the college which is organized strictly as a college, that is, with one curriculum, that of the liberal arts and sciences, with perhaps some specialized work in business or engineering in the last one or two years, there is no choice or selection until those last years are reached. In the larger universities, however, such as our great western universities, the selection is made much earlier. In many cases the student must enter a specified four-year course on entrance to college, although at present there is a decided tendency toward establishing a common freshman year, to enable the student to orient himself to the possibilities of the university.

The student who goes to the university and is misguided, or chooses wrongly, soon finds himself in difficulties. It is much to be regretted that, as at present organized, this maladjustment, in a large number of cases, results in the student's leaving the university. In a small proportion of the cases, the student changes his course without advice or guidance—except a formal notice that he is likely to fail—and tries again along a different line. It is well known that, to be successful in the engineering course, a student must be a so-called "shark" at mathematics. The artistically inclined student is automatically eliminated from the engineering school and, we hope, goes into the school of fine arts or the school of architecture. The clever young man enters the school of law, the more practically minded the school of business, and so on through the list of diversified offerings of the universities. In most of these universities it is possible to state the approximate levels

of intelligence necessary to maintain oneself in the various colleges and courses.

All of this is guidance—some of it positive and some of it negative. It is largely quite unconscious and is a result of our public school system functioning as a selective device, whereby it selects from the heterogeneous school population those who can make the best success in the subjects offered and can best meet its standards and requirements, and then eliminate the rest. This, of course, is as it should be, except that no equitable provision is made for those who are eliminated.

Under C, in the chart, "Individual Mental Factors," we must consider the intelligence quotient, the mental characteristics of the adolescent; the possession or non-possession of certain aptitudes, capacities, characteristics, and abilities; the development and stability of interests; the effect of the life-career motive; and any psychopathic or psychiatric conditions which may or may not exist in the individual.

The anti-social child has a difficult time in the kindergarten, and the parents arrive quite soon at the conclusion that the kindergarten is not very good and keep their child out of school until the time comes for entrance to the first grade.

As a general thing, a child may drift along through the first, second, and even the third grade without any great difficulty regarding his intelligence or special aptitudes or disabilities, but beginning with the fourth grade retardation begins to take effect. The child who lacks the intelligence to do the work or any special capacities required, or who possesses any disabilities, is thereby automatically sifted out and retarded, and, when that retardation becomes so great as to be noticeable, the individual is marked for special treatment, examination, and possible assignment to special classes, such as subnormal classes, coaching classes, or opportunity classes. In other words, the child who does not meet the formal requirements of the school system is sifted out and placed in some separate and special group.

In the junior high school the intelligence level functions more and more effectively as a selective device. Many children who leave school with the excuses that they "do not like the school," "can see no use in going to school," "dislike the teacher," "want to go to work," "the family needs the money," etc., do not possess sufficient intelligence to do the work of the school successfully or to find pleasure in meeting the requirements or standards of the school. The elimination of these students from school makes those who remain a more highly selected group.

The junior high school has been organized as a new school unit for

the purpose of satisfying the individual differences and the special characteristics of adolescent youth. The exact degree to which the junior high school has functioned in this respect, as measured by its holding power, is not yet answered with certainty. There is no question, however, but that the junior high school does now and will more in the future function in the conservation of the special aptitudes of the individual students, their interests, and particularly in the development of the life-career motive of the students.

The intelligence level becomes of increasing importance as a selective factor as we go up into the high school, the college, the graduate school. In the graduate school ability to do research work of an exacting type acts as a selective factor along with the high level of intelligence.

Under D, in the chart, "Factors of Environment and Heredity," we have, first of all, in the kindergarten the selective factor of geographical location and climate. It is possible for only a small percentage of the kindergarten population of the United States to ever attend a kindergarten class. Kindergartens are found in a comparatively small proportion of our public school systems and only in the up-to-date, well-to-do, intelligent communities. They are not found in the small rural communities, nor in the small country towns, nor in the lower and poorer districts of our large towns, so that the fortuitous circumstance of place of birth and residence becomes an important factor in determining whether or not a child attends kindergarten. We have many instances where the opening or paving of a road or the establishment of a bus system or trolley line has made a high school education possible to many students.

As we go up through the grades, the junior high school, and the senior high school, we encounter selective factors of race, creed and color. In some parts of the country students are selected on the basis of color, and in all parts of our country religious creed is a powerful selective device, determining whether or not the individual shall go to a public school, a parochial school, or a strictly private school. Nationality functions as a selective device in deciding whether an individual is more or less consciously guided into certain courses of studies leading into certain occupations.

In the numerous studies that are being made and points of view developed in regard to the functioning of our public educational systems, comparatively little attention has been given to the selective functioning of the various units of administration or the various offerings. It is reasonably certain that emphasis upon and study of this selective functioning would give additional criteria for reorganization and improvement.

FIELD TRAINING FOR RURAL PUBLIC HEALTH NURSES

An Experiment in Dutchess County, N. Y.

By Jane C. Allen

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The department of nursing education of Teachers College is engaging in a new enterprise in field experience for its graduate students in public health nursing who wish to specialize in rural work. In 1923 Dutchess County, New York, was chosen for the experiment station and, after a year's preparation of the field, the first student for this experience was accepted in October, 1924.

PROBLEMS INHERENT IN THE RURAL NURSING FIELD

For some time the department had been conscious of a definite and insistent need for a special preparation for rural nursing. Just as in the early years of public health nursing itself, when the desirability of additional preparation subsequent to hospital training was not at first recognized, so in rural nursing,—a new development in public health nursing which dates back, as a nation-wide movement, as recently as the World War,—it was thought that anyone equipped with special training or experience in public health nursing, or, all too often, with no background of preparation whatever, would be able to handle a rural job sufficiently well. Experience, however, has been demonstrating, not only to the nurses themselves, but to the communities engaging in nursing projects, that in this field, also, special preparation is essential for maximum success.

Conditions inherent in the rural field have constituted the main factors leading to this conclusion. The extent of the territory assigned to the nurse; her comparative isolation in respect to other public health nurses, which involves the lack of a close supervision, so important an adjunct in city work; the varied scope of the demands upon the nurse in this large field; the dearth of facilities for health work which meets her on every hand; and the outstanding need of community organization for participation in the health program she is trying to promote,—these are

the points of difference which call for adjustments and adaptations on the part of the rural nurse and which indicate the imperative necessity of special preparation if valuable time, energy and expense are not to be lost.

Picture a nurse, who has always been a city dweller, undertaking the initiation of public health nursing in a pioneer rural field. She is sent, it may be, to a western state to work under a local county Red Cross chapter, or a county Tuberculosis League, or a county health officer. The county is very large,—not infrequently one finds counties in the Far West as large as or even in some instances larger than some New England states. Not only is the extent of the territory assigned her overwhelming but transportation presents a definite problem. Even though provided with a Ford car, that indispensable adjunct of rural work, dirt roads in the isolated sections, the places where the need for her services is the greatest, become so bad in the winter months that they are well nigh impassable. Or it may be that she is located in the mountains of the southern states where the trails are suited only to travel by horse or mule back. East, west, north and south, rural public health nurses recognize that the size of their fields, coupled with the difficulties of transportation, represents a serious factor to be reckoned with from the start.

Nor are these physical difficulties the only ones that seem insurmountable. Immediately, the new nurse questions perplexedly: How shall I know what homes are needing me? How do I find my cases? Where shall I begin, here in this big county where there has never before been any public health nursing? She misses the easily accessible dispensary and clinic of the city. She feels baffled when she discovers the scarcity of rural physicians and finds how handicapped she is for want of diagnostic facilities and medical supervision for patients. In addition, she soon finds not only that there are no organized social agencies in the field, but that she herself is the one worker with any kind of training or experience for handling social problems of material relief and family maladjustment. When she realizes how alone she is, with no helpful supervisor close at hand, no other public health nurses to turn to for advice and encouragement,—no one, in fact, in the whole county who has any well defined idea of the work she is to do,—at this point, one of two things generally happens: either she becomes completely discouraged and returns to the familiar city field, or she bolsters up her courage and applies herself to working out her own salvation via the doubtful and hazardous trial and error method and with what help she

can secure from her State Department of Health, her reading and other available resources.

Rural public health nursing is, as yet, all too frequently pioneer work such as this, where mistakes are more costly than at any later stage and where success has a very important bearing not only upon the future of this particular field, but also throughout the widening circles of its influence. It is sad indeed to find a community disillusioned and even embittered because of the mistakes of a poorly prepared and unadaptable nurse, and even sadder, to meet a woman of sound fundamental training in nursing, who seems by character and temperament a good potential rural nurse, prejudiced against the field because of an unhappy and unsuccessful experience as an unprepared rural worker. The hit-or-miss method is indeed a laborious and expensive one and responsible for many of the failures of rural nursing projects.

Another requirement for maximum success in rural nursing which the unprepared nurse is usually unable to meet is leadership in community organization for health work. Executive work of this kind with a lay group organized as a committee or association to give support and backing to the nursing program does not come within the scope of the ordinary experience of the city nurse. In the country, however, it is absolutely essential in an adequate nursing program. Perhaps more than all else, this part of rural public health nursing represents the most difficult adaptation on the part of the nurse who is inexperienced in organization work, and it is here that she needs all the help which a properly conducted rural field experience should offer.

Still another factor enters into consideration of the inherent value of special preparation for rural nursing, and this is that with the conception of rural nursing as constituting a definite field within the profession of public health nursing, there is developing the idea of a special standardized technique as to program and procedures. A rural public health nursing field experience under the auspices of Teachers College should afford opportunity for research along this line.

DUTCHESS COUNTY AS A SUITABLE LOCALITY FOR STUDY

Dutchess County, the first field chosen for this experiment in nursing education, is within two hours' ride of Teachers College by the Hudson River fast trains. It is a typically rural county with a population of about 90,000. Poughkeepsie, the county seat and a third-class city of 44,000, and Beacon, next in size with 11,000, are the two city centers. The remaining 35,000 people live in villages and on farms. In the two cities

lives the industrial population, largely of foreign stock. Otherwise, the rural population falls into three distinct groups: (1) millionaires who own large estates along the Hudson River and around the beautiful village of Millbrook in the interior of the county, (2) more or less prosperous farmers, and (3) tenants on the estates and farms who work for wages. The normal population is greatly augmented during the summer months, as Dutchess County becomes more and more each year a summer playground for residents of New York City. A large number of farm homes in the county make a regular business of keeping summer boarders. With the Albany Post Road, the main north and south highway from New York City, carrying heavy tourist travel upstate, with another highway cutting diagonally across the county to the beautiful Harlem Valley and the Connecticut Berkshires, and with the famous Catskills immediately opposite on the western side of the Hudson, the ebb and flow of summer travel presents a kaleidoscopic picture. In still another way, the aggregate of population varies during the year, for Vassar College, with 1100 students, and some half dozen or more smaller private schools are located here and attract an appreciable number of students each year.

From the standpoint of health, the county exhibits conditions which are somewhat better than the average for the rural counties in this part of the country. Tuberculosis morbidity and mortality rates are somewhat below the average. The infant mortality rate, while not among the highest in the state, is at the same time not as low as it might be. But it is in its maternal mortality that the county presents the most alarming situation, only five counties in the state having a greater number of maternal deaths. This condition and the concurrent problem of scarcity of rural physicians, constitute the two outstanding health needs in Dutchess County to-day. With the physicians and hospital facilities centered mainly in Poughkeepsie and Beacon, the majority of the population is at a great disadvantage in the matter of adequate health and sickness service, and some localities are perilously isolated and helpless when emergencies arise.

In 1915, the Committee on Hospitals of the State Charities Aid Association made a sickness survey of Dutchess County. This was followed in 1916 by the organization of the Dutchess County Health Association for the purposes of providing more adequate care for the sick and of engaging in general preventive and health promotion work. This volunteer health agency has been carrying on for the past eight years a program which has consistently centered on general health education and

the demonstration of rural public health nursing. For the first year, considerable attention was paid to the training of nursing attendants as a means of providing supplementary facilities to graduate nursing service in the county. Later, efforts were focused upon a county-wide demonstration of school nursing which consisted of attending to the weighing and measuring and of assisting with the medical examinations of the children, the giving of health talks in the classrooms and doing home follow-up work to secure the coöperation of the parents in getting the children's defects corrected. The financial resources of the Association have limited this demonstration to the work of not more than two public health nurses at any time during the eight years.

In this length of time, however, largely as a direct result of the Association's efforts, a number of new developments have taken place in the county, all of which indicate a progressive trend in health promotion: (1) The County Board of Supervisors has for some four or five years been supporting a nurse for tuberculosis work in the county. This includes the nursing supervision of all diagnosed, suspected and contact cases of tuberculosis. Constant effort has centered on keeping all patients under the care of physicians and on hospitalizing as many of the open, positive cases as possible. (2) The two cities have established their own public health nursing services. In the case of Poughkeepsie, this service consists of one nurse assigned to tuberculosis and venereal disease work and three nurses to child hygiene work. Each nurse is responsible for a certain routine of clinics with physicians in attendance and for the usual home follow-up program in connection with these clinics. In Beacon, one nurse is employed by the city for child hygiene work and another nurse is maintained by the public schools for school nursing. (3) Five townships have engaged in independent local public health nursing projects, and at least five other townships had in earlier times maintained similar enterprises for periods varying in length from six months to one year. These local township programs include a general service of bedside care on the visit basis, including maternity service, and school nursing. And finally, (4) the Association's two nurses have been covering (at considerable disadvantage because of the size of the territory) the major portion of the county, exclusive of the two cities and the five townships providing their own services, spending practically their entire time in school nursing. This has meant that each nurse has attempted to do the routine work in some sixty-seven rural schools, many of them scattered and difficult to reach during the winter months. This was the status of public health nursing in Dutchess County in the

fall of 1923 when Teachers College became actively interested in the field.

CONCLUSIONS DRAWN FROM FIRST SURVEY

The first survey of the situation led to the following definite conclusions:

1. The time had come when organized effort should be made to secure an adequate county health service with county financial support.
2. The school nursing work of the Association, which, as a private agency, is primarily a demonstrating body, having long since passed the limits of a demonstration, should take a minor place in the program, and the Association should focus its activities on the next most needed phase of health work.
3. Pre-natal, infant and pre-school nursing represents an untouched field of public health work in the county and should receive major emphasis.
4. Certain changes in the organization and functioning of the Association whereby it may become more representative and efficient are desirable.

The New York State Department of Health has for several years past been greatly concerned because of the scarcity of rural physicians and the poorer showing in the vital statistics for the rural counties as compared to the urban centers. To this end the Department has carried on a systematic movement for the establishment of county health departments, and a few years ago permissive state legislation for such departments was enacted. Recently, a further step has been taken in the passage of a new law whereby state aid is available to rural counties setting up such machinery. Dutchess County, with its dearth of medical facilities in the rural sections, could go a long way toward solving its problems and raising its standard of health if such an official health unit were provided.

In the meantime, it would appear well for the Dutchess County Health Association to discontinue its attempt to provide school nursing service,—a project which has been consistently falling short of success because of the fact that the scope of the work undertaken was far beyond the limits of accomplishment for so inadequate a number of nurses,—and turn its efforts to the earlier age groups hitherto neglected in the county program. In view of the maternal mortality records, pre-natal

nursing seems particularly important. This phase of rural public health nursing is comparatively untried in Dutchess County. It consists, in a general way, of the supervision of pregnancy to the end that the mother may be so advised and safeguarded under the supervision of the physician and nurse that she is able to give birth to a normal, healthy baby with a maximum of safety and comfort for herself. It means frequent and regular visits by the nurse to the patient in the home. It means devising ways and means for bringing patient and physician together. It means careful and ingenious planning for maternity and post-natal care. It is easily one of the most important departments of rural work, for it includes the care of the child even before birth.

Important, also, is the health supervision of rural infants and preschool children, and every well-rounded rural nursing program recognizes this age group as the most promising and fruitful time for laying the foundations for sound health. Rural health consultation centers, where mothers may bring their babies and small children for health supervision by competent pediatricians, are essential adjuncts of this program. These centers are located at convenient village points,—in grange halls, in churches, in club-rooms or wherever comfortable, fairly convenient quarters are available. Returning to the centers at regular intervals, well children are kept well. Here mothers are organized into social study-groups as mothers' clubs in which they are taught the essentials of child care. Here, too, are established pre-natal consultations where expectant mothers receive that supervision under expert physicians which is fundamental in the prevention of the accidents incident to pregnancy and childbirth. Here, at certain intervals during the year, chest clinics in charge of the local tuberculosis specialist are held. And from these centers, the rural nurses go to the homes to advise and guide the mothers in the right care of themselves and their families.

To get under way, with any degree of effectiveness, an organized effort towards securing the establishment of an adequate health department by the county, and, in the meantime, pending the attainment of this desirable end, to put on the most constructive demonstration of needed work which is possible under existing circumstances, it behooved the Association to make itself as strong and effective an organization as possible. To this end, a more representative board of directors seemed advisable, representation to be based on (1) sections of the county, (2) township committees engaged in local health work, (3) official health

agencies, and (4) influential groups in the county. Added to a representative board, there should be built up as large and actively interested a membership throughout the county as possible. Upon these two essentials depend the efficiency and success of an organization like the Dutchess County Health Association.

Thus the four tentative conclusions arrived at after the first general survey of the situation in Dutchess County represented what seemed to be the minimum requirements which should be met before it would seem advisable to make immediate plans for receiving students into the field for rural nursing experience.

CONSEQUENT DEVELOPMENT OF THE COUNTY ORGANIZATION

In the year following this first survey, good progress was made in the attainment of all four objectives. Early in 1924 the new program centering on pre-natal, infancy, and pre-school work was inaugurated. The county appropriated funds for the support of a second nurse and the two county nurses were combined with the two nurses employed by the County Health Association, making a county staff of four. Three members of the Board of Supervisors of the county were designated as a Public Health Committee to have direct charge of the nursing staff. The County Health Association and the State Board of Health joined hands in furnishing a nurse to act as supervisor or consultant. With the county divided into four districts and the nursing work put on a general service plan, an intensive program was mapped out whereby a health center with a definite system of clinics and health consultations would be developed in each township within the next four years. In the matter of adjustments in organization within the County Association, considerable progress was made. A more representative board, a wider membership, the delegation of certain responsibilities to small committees, and a judicious decentralization have been gradually brought about. These changes have been attended by a noticeable strengthening of the position of the Association in the county. The decentralization process has consisted in the organization of thirteen township health committees which assume active participation in supporting the work of the county nurses. Thus, all in all, with the four township committees already functioning prior to 1924, seventeen of the twenty townships in the county have local health committees. By the summer of 1924, enough progress had been made to warrant serious consideration of opening the field to students in October.

CORRELATING COURSES AT TEACHERS COLLEGE

In the meantime, preparations had been under way at Teachers College also. A series of ten lectures on rural nursing were given both in the 1924 Spring Session and in the Summer Session. The plan for the student field experience was also carefully outlined. This plan provides for three practice periods a year, each three months in length. In order that these periods may most conveniently fit into the semester plan at the College, they have been arranged as follows,—October to January, February to May, and June to September. For the first year, it is expected that not more than two students will be accepted for any one practice period.

In outlining the experience, some very definite aims have been kept constantly in mind, namely,

1. To provide, as the field, a unit of territory in which the full responsibility may be carried by the student.
2. To insure a sufficiently varied experience, including the types of work most common to the rural field.
3. To furnish adequate supervision so as to minimize errors and afford opportunity for maximum returns to the community from the standpoint of needed service and to the student from the standpoint of educational values.

The township, representing as it does in Dutchess County the local unit in the county health program, was chosen as the logical and most suitable field for the student work. Not only would the work thus follow the general county plan, but, by using the township as the unit of territory, an area would be provided large enough to present all the varied services typical of a rural nursing program and, at the same time, small enough to make it possible for one nurse to carry out such a general service in a fairly adequate and satisfactory manner.

CONDUCT OF STUDENT EXPERIMENT IN THE FIELD

The services which it is expected may be available in this practice field are pre-natal, maternity, infant, pre-school, school, and tuberculosis nursing. These services are primarily advisory and instructive. The nurse functions as a scout or outpost to detect deviations from normal health or wrong tendencies in daily living. She is also a liaison officer interpreting to the physician the conditions in home, school or working place and the social and family background, and to the people

in the home the physician's diagnosis and instructions. Into whatever home she goes in the course of her day's work, she enters first as a friend who wishes to give constructive help, second as an adviser to point out the way to bring about needed adjustments within the home and the daily life there which the health needs indicate, and third as a teacher to guide and lead the individuals in the home to that knowledge and understanding of health preservation and disease prevention which will become an integral part of themselves. As a teacher, or to meet an emergency situation, the rural nurse finds her skill in bedside nursing a great asset. In the first place, her teachings are much more effective if they are accompanied by actual demonstrations, since many people find difficulty in applying abstract instructions to concrete situations. And second, the service with the hands which she renders in a time of need finds a sure way to the hearts of the family and wins receptive hearers when she teaches and advises. As in these various services in the homes and schools the nurse tries to bridge more and more effectively the gap between physician and patient, she finds clinics and health consultation centers essential adjuncts, for through them she is able to bring expert medical supervision within convenient reach. These services also enter into the working program for the student experience.

Added to these is the work with the local committee. This constitutes a rich experience for the student. If from the standpoint of educational values in the special rural experience, any phase of the program might be more important to her than the others, it would be committee work. For here, ability for leadership, involving all the tact, diplomacy and patience that leadership implies, is a vital necessity. It calls for a special skill of its own and for the nurse unaccustomed to organization work it requires new adaptations. A local public health nursing program is, ideally, a joint project belonging to the professional worker and the community, and, in practice, this principle should be kept in mind as a working objective. It seems safe to affirm that the success of rural nursing to-day, with rural nurses so few and the fields so large, depends greatly upon the recognition of this relationship between the professional worker and the organized lay group. Conversely, the failures can usually be traced to a lack in this particular. For this reason, considerable attention is given to this phase of the student experience.

The proper supervision of this work is of the utmost importance, involving, as it does, a fourfold obligation: (1) to the community, (2) to the student, (3) to the College, and (4) to the profession of public

health nursing as a whole. Service to the individual, the family, and the community must here, as in all nursing, have first consideration. The experience must yield reasonable educational returns to the student. Standards of public health nursing technique and procedures must be maintained. To achieve these aims, such guidance and counsel should be available at every step as to give the student all the assistance she needs.

During the first two weeks in the county, when the student is becoming oriented, there are daily conferences with the supervisor. These conferences give opportunity for helping the student to plan and evaluate (1) her contacts with local public health officials, hospitals, and social agencies; (2) her study of the background of local health work, and local laws and regulations regarding public health, sickness, etc., and of record and report forms used in local public health nursing work; and, finally, (3) her observations of work being done by other nurses in homes, clinics, and health centers. Again, after establishing herself in her township and getting started at her own independent piece of work, daily supervision is also advisable for a short time in order that she may have all the help she needs in launching her program. The first contacts with local physicians and public officials, the first committee meeting, the planning of her daily schedule, and the actual setting to work, all have an important bearing upon the success of the enterprise and should be wisely directed. During the remainder of the three months, the supervisory contacts are sufficiently frequent to keep the supervisor in close touch with the problems the student is meeting. In addition, the regular weekly staff conferences of the county nurses are attended. Here the student has an opportunity to compare and evaluate the experiences common to the group. The matter of wise supervision, —how to help and guide so as to give the best possible opportunity for the development and use of the capacities of the individual being supervised,—is at all times a great problem. In a student experience limited to a three-month period, it constitutes a factor of vital significance.

The whole plan for the rural nursing experience in Dutchess County is more or less tentative and in the nature of an experiment. The need, everywhere patent, for trained, experienced rural nurses must be met in some fairly adequate way. No professional group can afford long to ignore a fact so increasingly evident to-day that rural work requires specially trained workers. Nor should we acquiesce indefinitely in haphazard trial and error methods of meeting the demands in this particular field.

THE SUPERINTENDENT'S ANALYSIS OF SCHOOL FINANCES (*Cont'd*)

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An analysis and discussion of the major considerations which a superintendent of schools should have in mind in planning an intelligent financial program appeared in the January issue of this magazine.[1] In the present article it is proposed to give a detailed analysis of what seems to be the soundest and most economical methods of making a complete financial survey of a city school system.

A survey of school finances should be made with two objectives in mind. The first is an analysis of costs and expenditures over a given period for the several buildings and types of schools maintained within the city. This sort of analysis makes it possible to determine the effect upon school costs of such factors as the size of school buildings, the number of pupils per class, or the kind of course of study offered. The second objective in such a survey is that of making a comparative study of one's own city and of other cities comparable in size, wealth and location. This second objective requires a much less critical and detailed analysis of financial factors than does the first.

A. ANALYSIS OF SOURCES OF SCHOOL RECEIPTS

It is of prime importance to know the sources from which school moneys are derived, and to know what proportion of the total receipts is derived from each source. If two cities have equal educational loads to carry and have equal taxable resources from which to finance their educational projects, the city which depends upon local taxation for only 70 per cent of its school moneys is in a very different financial situation from the other which is securing 90 per cent of its funds from that source.

All receipts for school purposes may be divided into two groups—revenue receipts and non-revenue receipts. For practical purposes it has been found adequate to use the following subdivisions in analyzing receipts.

[1] McGaughy, J. R., "The Superintendent's Analysis of School Finances," *Teachers College Record*, January, 1925.

A. Revenue receipts from:
   - Federal Government
   - State
   - County
   - Local Taxation
   - Interest
   - Miscellaneous Sources

B. Non-revenue receipts from:
   - Sale of Property
   - Sale of Supplies
   - Bond Issues
   - Short Term Loans
   - Insurance
   - Miscellaneous Sources

This list of subdivisions of receipts is not recommended as ideal, or adequate for all situations. For instance, there are cities in which certain fines and fees are definitely allocated to school funds. If the receipts from this source are large enough to be significant, it would be well to include this item as one of the subdivisions of revenue receipts. On the other hand, the receipts from insurance may be so small and infrequent as to justify the omitting of this item, and the placing of such receipts under the head of "Non-Revenue—Miscellaneous."

The analysis of school receipts is of particular significance if a city is being compared with cities of other states. The degree to which the several states participate in the local support of public education varies from less than 2 to more than 50 per cent of the current expenses for school purposes.

In comparing one city with others, it is much more valid to make such comparisons on the basis of the percentage of unborrowed receipts or even on the basis of the revenue receipts only. The borrowing of money through short term loans or through the issuing of school bonds tends to be fluctuating and periodical. It is plain that if fifty or eighty per cent of a city's receipts in a given year are derived from a bond issue, the percentage of the receipts from each of the other sources will be entirely without significance for comparative purposes.

B. ANALYSIS OF EXPENDITURES

In making a survey of school finances, the task which is of most importance and which requires the greatest amount of labor and skill is

the detailed analysis of school expenditures according to function by buildings and by types of schools. On page 387 of the author's article in the January issue of the TEACHERS COLLEGE RECORD, there is shown the commonly used division of total expenditures into eight major functions and also the subdivisions of each of these functions into minor items. For the purpose of a general survey it does not seem necessary to analyze expenditures into so great a number of subdivisions as are required in this standard form of school accounting.

The following subdivisions of the eight functions have been found adequate for survey purposes in most cities. It is recognized that local needs and problems may justify either more or less of detail in a given city.

I. *Current Expenses*

1. General Control:
   - *a.* Business Control
   - *b.* Educational Control
2. Instructional Service:
   - *a.* Supervisors
   - *b.* Principals
   - *c.* Total Supervision
   - *d.* Salaries of Teachers
   - *e.* Text Books
   - *f.* Other Instructional Service
3. Operation of Plant:
   - *a.* Wages of Janitors and Other Employees
   - *b.* Fuel
   - *c.* Other Expenses of Operation
4. Maintenance of Plant
5. Fixed Charges:
   - *a.* Pensions
   - *b.* Insurance
   - *c.* Other Fixed Charges
6. Auxiliary Agencies:
   - *a.* Libraries
   - *b.* Health Service
   - *c.* Other Auxiliary Agencies

II. *Other Than Current Expenses*

7. Debt Service:
   - *a.* Payment of Bonds, Direct
   - *b.* Payment of Bonds, Sinking Fund
   - *c.* Payment of Interest
   - *d.* Other Debt Service

8. Capital Outlay:
   - *a.* Land
   - *b.* New Buildings
   - *c.* Old Buildings

This suggested subdivision needs little explanation. The first four items under General Control make up the total of "Business Control" and the remainder of General Control is classed as "Educational Control." (See page 387, January issue.)

Under Instructional Service the two items of supervisors' salaries and other expenses of supervisors are included under the general heading of "Supervisors." In like manner the four items having to do with "Principals" are included under that one heading. Total Supervision is a combination of "other expenses of supervision" with "supervisors" and "principals,"—in other words, it is the total of the first seven subdivisions under Instructional Service.

Under Operation of Plant it is suggested that only the first two items of janitors' wages and fuel be tabulated separately, and all the items remaining be collected under the one head of "Other Expenses of Operation."

No subdivision of Maintenance is recommended. This is not because an analysis of its subdivisions would not be significant, but rather because wide experience with school accounting systems shows that it is almost impossible to secure reliable data for the subdivisions of this item.

The expenditures for rents, taxes, contributions and contingencies are so small and infrequent that they may well be grouped into a single item under "Other Fixed Charges."

The two items of "Libraries" and "Health Service" under Auxiliary Agencies are always of importance for separate study. In certain cities it may be equally important to analyze out separately such items as the transportation of pupils or the provision of lunches.

These six functions discussed above make up the total which is called

Current Expenses. The other two items of Debt Service and Capital Outlay are of less importance for careful analysis.

The most important item under Debt Service is the total amount of interest actually paid out.

Under Capital Outlay it is usually adequate to divide the total investment in the physical plant under the three headings of "Land," "New Buildings" and "Old Buildings." Under "New Buildings" are included construction and equipment; under "Old Buildings," remodelling and alteration and the provision of new equipment of such buildings.

It should be recognized throughout that the subdivision here recommended is for the purpose of a general survey only. If a city superintendent is making a special study of some phase of expenditure, such as that for General Control, he will, of course, find it desirable to analyze the disbursements for that function into as greatly detailed subdivisions as it is possible.

Having agreed upon the amount of detail to be used in the analysis of expenditures, the next problem is the tabulation, under each of these heads and sub-heads, of the expenditures for each building or for each type of school within a building, if a given building houses more than one type of educational program. It is often the case that there may be a senior high school and a junior high school housed in the same building, or it may be desirable to determine the cost of kindergarten education as separated from that for the other elementary grades.

The greatest care should be taken to allocate as far as possible to each building or school every item of expenditure even though it necessitates the tabulation of such facts from the individual vouchers which are kept on file. The completeness and accuracy with which school records are kept will determine the degree to which it will be profitable to go back of the distribution ledgers themselves.

In every school system there will be certain general charges such as those for "General Control" or for "Health Service" which cannot be definitely allocated to any one building or school. In such cases these general charges must be pro-rated among the units which they serve.

This whole problem of the unit which shall be used for pro-rating general charges is one regarding which there is little agreement either in theory or in practice. It may well be defended that the soundest unit is that of the number of hours of service actually given to each educational unit. The practical use of the time unit in pro-rating will lead to absolute absurdities, however. It is unthinkable that the superintendent of schools, for instance, should keep a chart which will show just how many

minutes of his time during the year have been devoted to the kindergarten in Building A or to the six grades of the elementary school housed in Building B. Again, it may be sound and completely practicable to allocate general charges having to do with the operation of the plant on the basis of the number of rooms, or the number of square feet of floor space, or the number of cubic feet in each building or part of building, used for a given type of school. Perhaps it would be sounder to pro-rate such operation charges on the basis of the pupil capacity of school rooms. Not until a great deal of careful research has been done in this field will we be able to answer such questions authoritatively.

There are two bases of pro-rating in general use at the present time, either of which may be defended as being as sound as any other until careful studies have proved otherwise. The first of these is that used by the Educational Finance Inquiry Commission in its volume on *The Financing of Education in the State of New York*.[2] This method assumes that expenditures for items other than the salaries of teachers should be divided among different buildings and schools in proportion to the teachers' salaries paid in those educational units. The second unit in common use for pro-rating general charges is the number of pupil hours of instruction provided during a given period. This unit is secured by multiplying the average daily attendance by the number of hours of school per day by the number of days of school per year. This unit is used in such surveys of school finance as those of Springfield, Mass.,[3] and Providence, R.I.[4]

As was pointed out in the former article, there is wide variation among American cities in the proportion of total expenditure for public education which is made directly by the Board of Education of a given city. It is most important that the sort of analysis outlined above should be made of all expenditures for school purposes, even though they are expenditures by a Department of Public Buildings, by a First Selectman, or by a City Board of Health. If the Board of Education offices, for instance, are provided rent free in the city hall, a fair rental charge should be added to the cost of Business Control for the school system. Or if one-third of the City Health Department's work is given to the public schools, one-third of its overhead should be charged to public education. It is not unusual for an annual financial report to a state department of

[2] Strayer, G. D. and Haig, R. M., *The Financing of Education in the State of New York*, The Macmillan Company, 1923.
[3] *Survey Report, Public School System, Springfield, Mass., 1923-1924*, Teachers College, Columbia University, N. Y.
[4] *Report of the Survey of Certain Aspects of the Public School System of Providence, R. I., School Year 1923-1924*, The Oxford Press, Providence, R. I.

education, or to any other such agency, to tell very much less than the whole truth concerning a given city's school expenditure.

It may be stated here that painstaking drudgery in the matter of allocating school expenditures should result in leaving for pro-rating only five to fifteen per cent of the annual school expenditures.

At this stage of his work, the surveyor is ready to combine the allocated and pro-rated charges under each subdivision of each function for each type of school in each building. It is now an easy task to combine the kindergarten expenditures in each building into a single total for kindergarten education for the whole city, and so on through each type of school. These gross amounts may then be translated into intelligible facts by converting them into the amouht per pupil in average daily attendance, or the amount per some other unit of educational need, such as number of pupils belonging or number of pupil hours of instruction given.

At this point of the discussion it should be called to mind that it is most important in arriving at total current expenses or the total cost of education that the income derived from income-producing expenditures be balanced against these expenditures. To illustrate, the expenditures upon lunch rooms or book stores are income-producing expenditures. The income derived from such activities should be deducted from the total expenditure and only the balance included as a part of the current expense of providing public education.

C. ANALYSIS OF FINANCIAL ABILITY AND EFFORT

The relative ability of his city to support an educational program and the relative amount of economic effort being put forth in such support are other factors of finance concerning which it is most important that the city superintendent be informed.

Probably the best index of the ability of a municipality to support its school system is the amount of taxable wealth per school child in that city. The best measure of financial effort being put forth because of public education is the school tax rate. Knowledge of these facts for a single city would be of little significance. The relative position which a city occupies among comparable cities is the fact which makes possible the interpretation of these measures of ability and effort.

It should be emphasized that the figures for valuation and for tax rates must be adjusted in order to be of any significance in determining a city's financial status. The percentage of the real valuation at which

taxable property is assessed varies from fifteen or twenty per cent to full one hundred per cent. The surveyor of finances must exert great care to secure the most authentic and reliable figures possible for this percentage in each comparable city if he is to attach any importance to his conclusions concerning the relative ability and effort of his own city.

The most valid method of arriving at this percentage is to compare the sale prices of a large number of blocks of taxable real estate with the valuations assigned to these same pieces of property on the books of the tax assessor. When the best figure attainable for this percentage has been secured for the given city and for the cities to be used for comparison, the full value of taxable property for each may then be computed by dividing the assessed value by the percentage secured. In like manner, multiplying the municipal and school tax rates by this percentage gives what is commonly called the real tax rate, i.e., the tax rate which would have to be levied in order to bring about the same return as at present, were taxable property assessed at its full valuation.

It is implied that two different groups of cities should be used for comparative purposes in interpreting these two measures of ability and effort. The significant fact concerning the ability of a city to pay for public education, or for any other governmental function, is its relative taxable wealth per pupil or per capita, as compared with its neighboring cities or with cities of approximately the same size and geographical location. On the other hand, the measure of the effort which a city is putting forth for a given purpose is of prime significance if that city be compared only with cities of approximately the same size and ability. In other words, size and location should be the basis of choosing comparable cities in studying ability to pay, and size and ability should be the constant factors in measuring effort put forth.

The comparison of the real school tax rate of the given city with the rates of comparable cities is a sound measure of the relative amount of effort put forth for public education. A measure of the relative importance which each city attaches to public education may be secured by finding the per cent which the school tax is of the total local tax—the percentage of the local tax dollar devoted to the public schools.

In cities in which the schools receive their local support through direct appropriation by the municipal government to the Board of Education, no separate school tax is levied as such. In such cities the school tax rate should be computed by finding the percentage of local taxes which is devoted to the public schools. The total municipal tax rate multiplied by this per cent results in the equivalent of a school tax rate.

Another measure of importance in determining both the ability to pay and the total cost of education is the bonded indebtedness of a community. It is important in this connection that the superintendent making such a study should make sure that the measure which he uses for comparison is the net indebtedness rather than the gross indebtedness outstanding. The need for this caution is at once apparent. There is great variation in the kinds of bonds which have been issued for school purposes in different cities. Many of these bonds, particularly in past years, have been of the sinking fund type. Unless the assets in sinking funds be deducted from the amount of indebtedness outstanding, the measure of a city's real indebtedness may be very greatly in error. The need for this caution is particularly imperative when one is computing the total cost of public education by buildings within a given city. Even though there are bonds for $100,000 outstanding against a given building, if $60,000 of this amount has been collected and is held in reserve in a sinking fund, the school community really has bought and paid for $60,000 worth of that building.

A schedule showing the name, age, and number of rooms in each building of a city, along with the net indebtedness outstanding against that building, will be found to be an exhibit of interest and value in presenting a survey of the school finances of a city.

Another tabulation which is worth while to make is one which shows the net municipal indebtedness per capita for purposes other than schools, the net school indebtedness per pupil, the percentage which the net school indebtedness is of the net municipal indebtedness, and the percentage of increase in each sort of indebtedness over a period of the last five or ten years—each of these for the given city and for the group of cities comparable in size and wealth.

D. INTERPRETATION OF THE INCREASES IN SCHOOL EXPENDITURES

Except for the recommendation that the increase in bonded indebtedness be shown over a period of years, this article thus far has been concerned with the cross-section for a single year of the financial situation of a city school system. One of the requirements of a sound survey is yet to be met. This is a study of the increase in school expenditures and school costs over a period of years. For this purpose it is adequate to present only the gross current expenses of the total costs of public education for five, ten and fifteen years ago, let us say, along with the average daily attendance by type of school, and the number of hours per

year that school was in session, for each of these years. From these data it will be possible to correct the misconception that the cost of public education in a given city has been making unwarranted and unreasonable increases, by showing the causes of these increases. Among the most important of these causes are the following:—

The number of hours of instruction per year has increased rapidly, the total number of children in school and also the percentage of the population in school, particularly at the more expensive educational levels, have increased more rapidly, and at the same time the purchasing power of the school dollar is only one-third or one-half of what it was fifteen or twenty years ago.

Every student of school finances owes it to his own community and to the cause of public education in general to make known the real truth concerning increases in school expenditures. The technique for doing this job is simple and entirely sound. First determine the number of pupil hours of instruction given during the present year and during the preceding years which have been chosen. This figure is obtained by multiplying the average daily attendance by the number of hours schools were in session during that year. This product, divided into the current expenses, or into the total cost of public education as defined in the author's previous article, will give the current expense or total cost of instructing one pupil for one hour during each of these years. This eliminates the effect of the variables of increasing school attendance and increasing length of school years.

If the cost of elementary education, of high school education and of the various types of special education for each of these years can be determined, a further refinement will eliminate the effect of the more rapid increases in attendance in the more expensive types of education. This may be done by translating the number of pupil hours of instruction given in other than the elementary schools into the greater number of hours of elementary instruction which could have been provided at the same cost. For instance, if it costs twice as much per pupil hour for high school education and three times as much per pupil hour to provide the educational offering given in evening school, multiplying the number of pupil hours in these schools by two and by three respectively and adding the products to the number of pupil hours of elementary instruction will give a grand total equated on the basis of the cost of elementary education. If this be done, the three variables of the increasing length of school year, the increase in total attendance and the more

rapid increase in the higher priced kinds of education will all have been eliminated.

Only the fourth variable remains for consideration; that variable is the decreased purchasing power of the school dollar. The effect of this decrease may readily be eliminated with sufficient accuracy by dividing the figure for each of these years by some standard index of the cost of living for that year. There are two or three such indexes available. A comparison of the final figures for the present year and for each of the previous years chosen will tell the real truth concerning the increase or decrease in the cost of public education. In many cities it will be found that the enormous increases in school expenditures which have occasioned so much heated discussion and demand for retrenchment have been apparent rather than real. It is almost literally true that the tax payers of many cities are expecting school administrators to buy with a given number of forty-cent dollars many times as much educational service as they were buying fifteen years ago with an equal number of one hundred cent dollars.

Surveying the finances of a city school system is a complicated and laborious undertaking at best. With school records and financial accounts kept as they are in many cities, an adequate scientific analysis of financial facts may seem almost impossible.

The present article has attempted to furnish a sort of manual to guide a superintendent of schools in doing some of the more obvious and essential work that must be done if he is to be intelligent in planning the financial program for his schools. Only as he follows such procedure can he succeed in making his public intelligent regarding the true facts concerning the school finances of his city.

A STUDY OF CHILDREN'S CHOICES OF READING MATERIALS

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In a previous issue [1] of the TEACHERS COLLEGE RECORD was published a study of the actual content of fifteen school readers. The present article deals with the actual reading interests of children and compares these interests with the results of the first study.

In this study an attempt was made to get children's choices of reading materials, unbiased by school-room influence. Children often choose certain stories because the teacher has especially stressed them. Librarians admit "waves" of choice, for instance, for *Robinson Crusoe*, *Hiawatha*, or the *Tree Dwellers* at a time when these stories are being studied in school. Again, children choose certain books because no others are available. Perhaps the great men of history whose choices as children seem so unusual to us now, made these selections because there were no other books available. They had an easier situation to face than the child who is surrounded by the present wide variety of material, good, bad and indifferent.

LIBRARY INVESTIGATIONS

Public libraries in New York City proved valuable sources of information. Five lines of investigation were followed here: (1) Conferences with the librarian as to the types of books children ask for and read. (2) An actual count from the library card of the number of times a book had been borrowed for home reading. (3) A tabulation of the popularity or frequency of use of a book, by the condition of the book. More than a thousand books were examined for signs of finger prints, torn pages, soiled backs, etc., since these conditions indicated frequency of use. This suggestion was obtained from every librarian consulted. (4) An actual tabulation of the story, or book, being read by the children in the reading rooms of the libraries. (5) Conversations with children, asking them their preferences in books, and why.

[1] February, 1925, number: "Reading Interests Compared with the Content of School Readers" by the same authors.

Although the first source of information, namely, conferences with librarians, is based upon opinion and observations rather than upon actual count, we feel that valuable contributions were made by these librarians, most of whom had watched and helped many children in the use of library books. Most of the librarians were unanimous in their opinion that there are certain types of stories for which children will ask.

In the actual count of the frequency of use of books we have more definite data. Even here, however, we realize that children are influenced by the demands made upon them at school, and by the fact that often the book which they want is not available and they have to take a substitute. This tabulation is not printed here, but the data are used in the summary.

We feel that the third line of investigation, based on the condition of the book, has given a fairly good index to the popularity of particular books. First, all the books on the library shelves for children of the first three grades were listed. Then the date of purchase was placed after each book. We examined all of these books first without any regard to age, looking only for indications of use or lack of use. Next, we went through the books which were purchased at the same time and noted the condition of each. It seems significant that twenty-five books which came to a library at the same time were in all stages of use at the end of six months. Some were practically the same as new, others showed some use, while still others indicated much use. In several instances the same books, or types of books, were found in almost the same condition in as many as five different libraries. We found books that had been in the library for several years, but which still showed little wear.

The data from the fourth source were classified by age and sex. This material was tabulated in the same way as the data from the various school rooms. The justification for the seeming duplication, however, is that we feel that the children's choices are apt to be more clearly their *own* choices. Here they read what they wish to read. We observed the reading of 1,500 children over a period of nine months.

From talks with the children in the reading rooms we gathered some very interesting information. The children were asked the following questions in various forms: (1) Why did you select that book? (2) Do you like it? Why? (3) Have you read others like it? (4) Should you like to read another book like it? (5) What is the most interesting story or book you ever read?

The most valuable information for our purposes was obtained from

the answers to question 2. Some of the typical answers were: "Because it is funny." "It is about animals." "It tells how to do things." "It is exciting." "I like the pictures." The most frequent answer was "Because it is funny."

To question 1 we got the following answers: "I knew it was about animals." "My brother or sister read it." "I liked the name." "I liked the pictures." "I wanted to find out about kites, birds, engines," etc.

Quite often a child was very frank in saying he did not like a book and he usually could tell why. "It is silly," was the most frequent answer.

CLASS ROOM INVESTIGATIONS

The choices of material were made by children from the South, North, East, West, and Middle West of the United States. The data were obtained from twenty school rooms having a total of six hundred pupils, and in the conclusions were supplemented by data from the six New York libraries; from informal talks with children in the Horace Mann School, New York City; and from conversations with children on the street on their way to and from branch libraries.

In order to secure data from the class rooms, letters were written to teachers living in various parts of the United States, who were known personally to the writers. In the letter, after the purpose of the study had been explained, the following request was made: "Will you please find out from your first, second and third grade children the answers to the following questions: (1) What story, of all you have read and heard, do you like best? (2) What story do you like next or second best?" As a caution to teachers we asked them to obtain answers with as little of the school room situation as possible. We explained that we wanted the child's own *free* choices, uninfluenced by the remarks of the teacher or emphasis on certain stories. We asked that no particular reference be made to any story that had been recently taught. In this way we hoped to eliminate the factor of recency. We also suggested that the teachers talk informally with the children on the playground, going to and from school, or in the free periods. In some instances, parents reported on the child's favorite story or stories.

When the data were received, they were tabulated by sections of the country, then by grades. Care was taken to choose children from different parts of the United States, both city and country, in order to show that in general children's interests are very much the same regardless of locality.

After this record of children's preferences as to types of stories was made, a similar study was carried out in two large cities, which brought the total number of children expressing preferences to five thousand. These data, while not shown here, have all been taken into account in the conclusions stated.

We do not claim that these data, secured from class rooms and libraries, are not influenced to some degree by teachers, librarians, or available materials; but we have tried to get the child's real choice as nearly as possible. While the selections in these representative books

A SUMMARY OF CHILDREN'S CHOICES OF STORY MATERIAL

[Data from Choices of 600 Children]

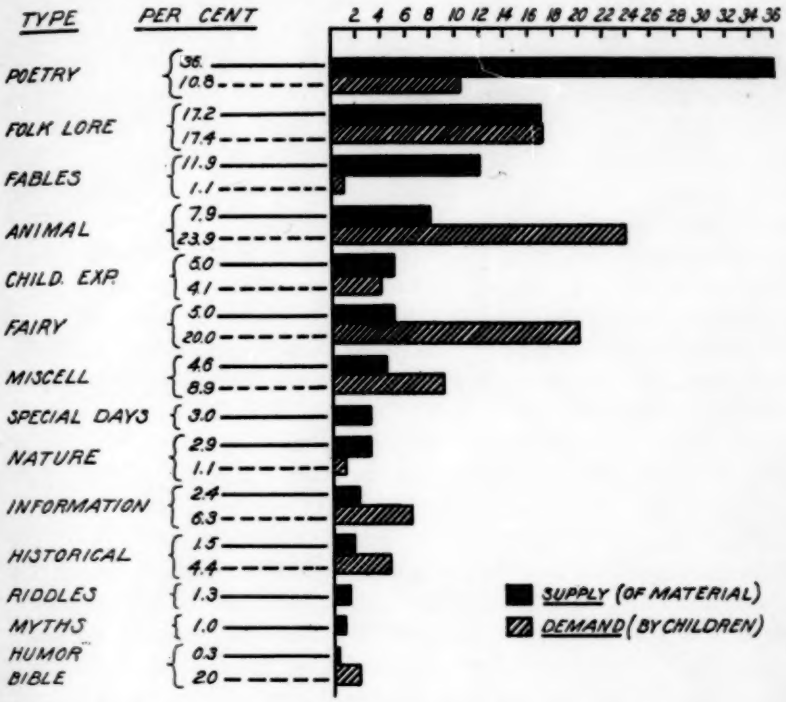
Type of Material	South	North	East	West	Middle West	Total 1st & 2d Choice	Per Cent
Animal	57	43	62	71	38	271	23.9
Fairy	19	45	36	84	44	228	20.0
Folk Lore	53	40	36	18	50	197	17.4
Poetry	9	20	42	27	25	123	10.8
Miscellaneous	17	19	24	20	21	101	8.9
Informational	15	17	8	14	17	71	6.3
Historical	33	3	4	6	4	50	4.4
Children's Experiences	18	5	8	5	9	45	4.1
Bible	3	3	6	1	4	17	1.5
Nature	1	11	..	..	..	12	1.1
Fables	..	6	4	..	3	13	1.1
Humor	..	3	..	..	2	5	0.5
Riddles	..	..	1	..	..	1	
Myths	..	..	..	..	..	..	...
Special Days	..	..	..	..	..	..	...
TOTAL	225	215	231	246	217	1134	100.0

A SUMMARY OF TYPES OF MATERIAL FOUND IN 15 READERS *

Type of Material	No. of Selections	% of Material Used	Type of Material	No. of Selections	% of Material Used
Animals	63	7.9	Bible	1	0.1
Fairy	39	5.0	Nature	23	2.0
Folklore	137	17.2	Fables	94	11.9
Poetry	287	36.0	Humor	2	0.2
Miscellaneous	37	4.6	Riddles	10	1.3
Informational	19	2.4	Myths	7	1.0
Historical	12	1.5	Special Days	24	3.0
Children's Exper...	39	5.0	TOTAL	794	100.0

* Summarized from a table in part one of this study, which appeared in the February number of this magazine.

CHART SHOWING RELATION BETWEEN SUPPLY AND DEMAND



may not be the ones from which all these children are choosing, we felt that they show a fairly wide enough choice from materials on the market to-day to justify such a statement as the following: Fifteen readers to-day offer 94 selections of fables. Out of 600 children only 13 first or second choices of fable materials appeared. Similar statements arise from the accompanying table and graph.

COMPARISON OF CHILDREN'S CHOICES AND MATERIALS IN READERS

Animal. The 271 choices of animal stories where the books offer 63 confirm previous records and all studies of child nature. The interest in animal life in action is a true and predominating interest on which to build new material.

Poetry. The statement has been made by Abbott [2] and also by Dunn [3]

[2] Abbott, A., "Reading of High School Pupils," *School Review*, 1902, X: 585.

[3] Dunn, F. W., *Interest Factors in Primary Reading Material.* Teachers College Contributions to Education, No. 113.

that the interest of children in poetry seems small. We found the interest strong enough to question the conclusion. With more prose than poetry to choose from, we found three out of fifteen boys voluntarily choosing poetry. In the totals we found 287 poetry selections and 123 choices. *Mother Goose* is included under poetry.

Informational. In addition to the fact that historical material is also informational, we found 71 choices for the purely informational type of story. If we put the historical and informational together, we have 121 choices; the readers offer 31 selections of these two types. We believe the choice might be even greater if there were more informational material. There is a need for simple travel stories and journey material. There is also evident a desire for stories beginning with "How" or "Why," such as we find in various commercialized children's encyclopedias. In one of these are found such fascinating paragraphs as: Why Does a Match Strike? How the First Men were Puzzled about the Story of the Earth. Why Do Bees Sting? The Wonder of a Piece of Silk. How to Make Box Furniture. Surely lessons such as these could well be included in school books.

Historical. There were 50 choices of historical material. This seemed to be a large number for primary children and is probably due to the interesting factors which are brought in aside from history; for example, the childhood of Lincoln and Washington, children's experiences, together with imitation of the reading done by older brothers and sisters. Much of this material might come under informational material, for children often have a real desire to know facts which they hear older people discuss.

Children's Experiences. There were 45 choices of other children's experiences, which merely confirms former opinions.

Bible. There were seventeen choices here with but one Bible story found in the readers. This seems to show a lack of such material and a need for well-chosen Bible stories. It might be well to be guided by those factors of interest that good secular material contains. This would mean using Bible stories which contain children, animals, action, rhythm.

Nature Stories. Many animal and fairy stories deal with nature material; but in our classification we chose as nature stories only those in which nature was the predominating theme, as "Mother Nature's Work Shop" or "The North Wind." There were 12 choices of nature material, while the readers offered 23 nature selections. Are children not interested in nature stories? Or do the books offer too

many selections? Or are the selections not of the type that appeals to children? Some of the material seemed rather abstract.

Fables. It is quite possible that the fable has been stressed too much, especially the type designed to teach a moral. Thirteen choices by children in school, when 15 readers have 94 selections, seems rather a small proportion of choices.

Humor. In four out of the five choices pupils chose the story because of its "being funny." While humor is a quality found in many of the animal stories and folk tales rather than a type of story, it seems that we need more such good tales as "Brer Rabbit," "The Laughing Dumpling," etc.

Riddles. Children have not been led to feel that a riddle is a story or that it has a place in their reading. Ten riddles were found in three books; seven of these were in one book. The fact that there was only one choice of riddles is no doubt due to this lack of riddles in reading material. Would it not be well to introduce more good riddles into the readers? Riddles show a clear, concise, crisp way of describing things; they appeal to curiosity and to puzzle-solving, two factors of interest and satisfaction in the psychological meaning.

Myths. There were no choices of myths from the six hundred children and the books offered 7 selections. Perhaps myths have little place in primary reading, and this confirms the statement of a teacher of literature who says that myths are beyond the primary age child.

COMMENTS AND CONCLUSIONS ON MATERIALS IN READERS

In the thirty readers studied, which are quite representative of the reading done in schools in America to-day, we find an increasing tendency to give pupils good literature and to make the choice of materials according to the interests of children. In making such a statement we need also to recognize that some such process has been going on since 1880. It is the utter lack of organization, the overlapping, the poor versions, the inartistic mixture of folklore and information, the meager factual material and often the subservience to a special method, that have often multiplied the number of readers published and sacrificed progress in securing higher quality.

As early as 1850, the then popular series known as *The McGuffey Readers* contained good selections by the best writers. In a revision of 1857 conscious attempts were made to appeal to the interests of children. The compilers of the new edition say: "Such lessons as dis-

criminating practical teachers have found the least interesting have been removed, and others, with large additions, especially of primary matters, have been introduced."

Between 1880 and 1910, the reader containing literary content was being evolved. People had the idea of a literary reader even years before, but they also had the idea of the child as an embryo adult. From their adult heights of what he should read when he had climbed so far, they proceeded to pour down, over, in and around the child, the abstract moral principles, the eternal admonitions of the rewards and punishments in the next world, and the mature selections written by literary masters with no intent of writing for children. They cherished the hope that children would suddenly rise fully equipped with habits and tastes to read literary selections. Many children did thus come forth; but their parents or a nearby library deserve the credit.

Those who stood strongly together for the literary reader made mistakes also. President Eliot said, "The object of reading with children is to convey to them the ideals of the human race." The normal child, by actual and vicarious experiences, may grow to appreciate these ideals, but it is not every sort of literature which will make him care for it deeply enough to "hunger and thirst" for more and more good reading. So President Eliot's *Heart of Oak Books,* though a worthy attempt, were graded so high, were so difficult and so unattractive in their make-up that they have long since been superseded by material of just as good literary value that the pupils really wish to read. The *Heart of Oak Books* and their kind are not chosen by children in schools or in the children's room of the library. Yet what a wonderful advance they represented in daring to start the child at once into the open book of good literary material rather than into the "mysteries" of mechanics.

This tendency toward more literary material was largely a matter of opinion. Without more modern scientific attitude we need to base our conclusions on a study of actual books, actual children, and actual children's interests. In checking up actual cases there is a need for more literary material if it is not too far above the child's level of comprehension. There is certainly a desire on the part of children for more informational material, for more good humorous stories, for a different type of historical story, and for more riddles. The right type of Bible story would appeal to children. Nature material needs to be improved by being based on real nature facts—children do not care for "make-believe" nature stories. The study of poetry choices is too meagre to make any recommendations.

NEW STUDIES IN EDUCATION

A BRIEF LIST OF MATHEMATICAL BOOKS SUITABLE FOR LIBRARIES IN HIGH SCHOOLS AND NORMAL SCHOOLS *

NATURE OF THE BOOKS IN THIS LIST

The following brief list is prepared to meet the many requests which come to Teachers College for information as to books for the use of teachers of mathematics or suitable for libraries in high schools and normal schools. An effort has been made to select a few books which will be helpful to students and teachers in such schools, but it must be understood that numerous other works are eminently worthy of having a place in such a list. No books in foreign languages have been included, but the department of mathematics of Teachers College will gladly give information relating to such books to any who may inquire. Except in the field of applied mathematics, no books have been included which are, in the ordinary sense of the term, text-books for secondary schools. The prices given are subject to change but are approximately correct.

ALGEBRA

BURNSIDE, W. S. and PANTON, A. W. *Theory of Equations.* 2 vols. Longmans. $5.00 each.

The best work in English for high school teachers to consult on this subject. It elucidates many points in elementary algebra.

CHRYSTAL, G. *Algebra.* 2 vols. Macmillan. $5.00 each.

A very valuable source of information, material, and inspiration for teachers and students. The most comprehensive algebra in English.

DEDEKIND, R. *Essays on Number.* Translated by Beman. Open Court. 75 cents.

This translation of a classical work on number is very valuable for the teacher of algebra because it sets forth clearly the nature of the irrational number.

FINE, H. B. *College Algebra.* Ginn. $2.40.

A short standard reference work for use where a longer treatise is not necessary.

* This annotated list of books was prepared by the following members of the staff of the department of mathematics of Teachers College: Professors David Eugene Smith, Clifford B. Upton, and William David Reeve, Mr. William E. Breckenridge and Mr. Jekuthiel Ginsburg.

APPLIED MATHEMATICS

BALL, K. F. and WEST, M. E. *Household Arithmetic.* Lippincott. $1.50.

Helpful for the teacher of mathematics in a vocational high school.

BRECKENRIDGE, W. E. *The Slide Rule. A Self-Teaching Manual.* Keuffel and Esser. 50 cents.

This may be obtained with a slide rule or separately. The range of problems extends from arithmetic through trigonometry.

BRECKENRIDGE, W. E., MERSEREAU, S. F. and MOORE, C. F. *Shop Problems in Mathematics.* Ginn. $1.40.

A book including problems in the field of carpentry and metal work, designed to correlate the work of the classroom with that of the departments of mechanic arts and science.

BRINTON, W. C. *Graphic Methods for Presenting Facts.* Engineering Magazine Co. $4.00.

An interesting presentation of the entire field of graphic work and very helpful as a book of reference.

BROOKMAN, T. A. *Applications of Algebra Dealing with Automobiles.* Scribner. 50 cents.

The work of a group of mathematics teachers in a California summer school.

BROOKMAN, T. A. *Family Expense Account.* Heath. $1.00.

A summary of the subject of household accounts, for classes in arithmetic.

DALE, R. B. *Arithmetic for Carpenters and Builders.* Wiley. $1.75.

Presents in simple form the arithmetic found in the daily work of the carpenter and builder. It also includes geometry for builders.

EDGERTON, E. I. and BARTHOLOMEW, W. E. *Business Mathematics.* Ronald Press. $2.00.

Helpful for the teacher of mathematics in a commercial high school and useful in showing the applications of algebra.

FINNEY, H. A. and WALTON, S. *Mathematics of Accounting and Investment.* Ronald Press. $4.00.

Helpful in commercial high school work and in showing how algebra is used in modern life.

GARDNER, M. and MURTLAND, C. *Industrial Arithmetic for Girls.* Heath. $1.00.

Contains numerous simple problems in arithmetic applied to millinery, sewing, and novelty work.

GEPHART, W. F. *Principles of Insurance.* 2 vols. Macmillan. $2.00 each.

Helpful for the teacher of mathematics in a commercial high school.

GLOVER, J. W. *Tables of Applied Mathematics in Finance, Insurance, and Statistics.* George Wahr, Ann Arbor, Mich. $4.50.

A practical work for students in this field.

JOHNSON, J. S. *Practical Shop Mechanics and Mathematics.* Wiley. $1.40.

Suited for use in trade schools.

KEAL, H. M., PHELPS, N. S. and LEONARD, C. J. *Technical Mathematics.* 3 vols. Wiley. Vol. I, $1.50; Vol. II, $1.75; Vol. III, $1.25.

A series of books for teaching the mathematics of industry on the unit plan.

KNOEPPEL, C. E: *Graphic Production Control.* Industrial Management, New York. $10.00.

An excellent source book for graphic work and algebraic applications. Very helpful for teachers in a commercial high school.

KOCH, E. H. *The Mathematics of Applied Electricity.* Wiley. $3.50.

A mine of information on the application of mathematics to electricity.

MARSH, H. W. *Industrial Mathematics.* $3.00. *Technical Algebra.* $2.50. *Technical Geometry.* $1.75. *Technical Trigonometry.* $1.75. Wiley.

A series containing valuable material on the mathematics of modern industries.

PEDDLE, J. B. *The Construction of Graphical Charts.* McGraw-Hill. $2.00.

A treatment of graphical methods of calculation.

SKINNER, E. B. *Mathematical Theory of Investment.* Ginn. $3.40.

Gives the application of algebra to investments. Helpful for teachers and students in commercial high schools.

SYKES, M. *Source Problems in Geometry.* Allyn and Bacon. $2.50.

An interesting work containing numerous possible applications of geometry.

TRACY, J. C. *Plane Surveying.* Wiley. $3.50.

Contains many problems useful for illustration in secondary mathematics.

WENTWORTH, G., SMITH, D. E. and SCHLAUCH, W. S. *Commercial Algebra, Books I and II.* Ginn. $1.36 each.

These books carry the applications of algebra into new fields of commercial activity.

WENTWORTH, G., SMITH, D. E. and HARPER, H. D. *Fundamentals of Practical Mathematics.* Ginn. $1.20.

A valuable collection of applied problems involving arithmetic, intuitive geometry, and the elements of algebra.

WENTWORTH, G., SMITH, D. E. and HARPER, H. D. *Machine-Shop Mathematics.* Ginn. $1.20.

Adapted to the needs of students in machine-shop work. It contains a large number of illustrations.

GEOMETRY

FRANKLAND, W. B. *Theories of Parallelism.* Macmillan. $2.20.

The best work in English on the various methods of treating the question of parallels.

HEATH, T. L. *The Thirteen Books of Euclid's Elements.* Cambridge University Press. £ 3. 3 sh.

The best single work for a teacher of geometry to own. A treatise of the highest scholarship. It discusses from a historical and scientific standpoint all the definitions, axioms, postulates, and propositions found in Euclid's *Elements.*

HILBERT, D. *Foundations of Geometry.* Open Court. $1.00.

A scientific treatment of the axioms of geometry.

HILL, M. J. M. *The Contents of the Fifth and Sixth Books of Euclid.* (With a note on Irrational Numbers.) Macmillan. $3.20.

The best recent presentation of the Greek theory of proportion and of its possibilities in teaching.

HILL, T. *Geometry and Faith.* Lothrop. $1.25.

A new edition of an excellent little work for students to read.

MANNING, H. P. *Non-Euclidean Geometry.* Ginn. $1.36.

An elementary presentation of geometry as it would appear if the parallel postulate of Euclid were not assumed.

MANNING, H. P. *Fourth Dimension Simply Explained.* Munn. $1.50.

An interesting collection of essays on the fourth dimension.

ROW, T. S. *Geometric Paper Folding.* Edited by Beman and Smith. Open Court. $1.00.

An ingenious work showing how, by means of simple paper folding, a considerable range of geometry may be covered.

HISTORY

ALLMAN, G. J. *Greek Geometry from Thales to Euclid.* Longmans. $5.00.

A very scholarly treatment of the formative period of elementary geometry.

ARCHIBALD, R. C. *Euclid's Book on Division of Figures.* Cambridge University Press. $1.75.

One of the best contributions to the history of geometry made by American scholars.

BALL, W. W. R. *History of Mathematics.* Macmillan. $4.00.

One of the best-written general histories of mathematics in English. It should be in every high school and public library.

BALL, W. W. R. *Primer of the History of Mathematics.* Macmillan. $1.00.

A compendium of the preceding work. If a school does not possess the larger work, it should have this one.

CAJORI, F. *History of Mathematics.* Macmillan. $4.00.

A work arranged somewhat after the style of Ball, with considerable material not given by the latter.

CAJORI, F. *History of Elementary Mathematics.* Macmillan. $2.25.

Also somewhat after the style of Ball. Like the preceding work, it should be in all high school libraries.

CONANT, L. L. *Number Concept.* Macmillan. $2.40.

An interesting work on the early methods of counting, particularly as seen among savage people of to-day.

FINK, C. *History of Mathematics.* Translated by Beman and Smith. Open Court. $1.50.

A compendium of Cantor's great German history. It covers a wider field than Ball, but it is not so well written.

HEATH, T. L. *History of Greek Mathematics.* 2 vols. Clarendon Press. $16.70.

The standard authority upon the subject. It should be in all college and high school libraries.

JACKSON, L. L. *Educational Significance of Sixteenth Century Arithmetic.* Bureau of Publications, Teachers College. $2.00.

A good résumé of arithmetic in the formative period of the printed text-book.

KARPINSKI, L. C. *Robert of Chester's Latin Translation of the Algebra of Al-Khowarizmi.* University of Michigan Humanistic Series. $2.00.

One of the most scholarly of the American contributions to the history of mathematics.

MAHĀVĪRĀCĀRYA. *The Ganita-Sāra Sangraha of Mahāvīrācārya.* With English translation and notes by M. Rangācārya. Madras Government Press. About $5.00.

The greatest contribution made in a century to the history of Hindu mathematics. A translation, with notes, of an extensive work of the ninth century.

MIKAMI, Y. *The Development of Mathematics in China and Japan.* Teubner, Leipzig. About 18 Reichmarks.

The best work in English upon the subject.

SMITH, D. E. *History of Mathematics.* 2 vols. Ginn. Vol. I, $4.00; Vol. II, $4.40.

The first volume gives a general chronological survey of the history of elementary mathematics. The second volume treats of the history of special branches, such as numerals, computation, algebra, geometry, and trigonometry.

SMITH, D. E. *History of Modern Mathematics.* Wiley. $1.25.

A brief sketch of some of the most important chapters of modern mathematics, with a bibliography. Carries the work only to about 1895.

SMITH, D. E. *Mathematics.* Marshall Jones & Co. $1.50.

In the series, "Our Debt to Greece and Rome." It gives a popular summary of the contributions of the Greeks.

SMITH, D. E. *Number Stories of Long Ago.* Ginn. 60 cents.

A reading book for elementary pupils.

SMITH, D. E. *Rara Arithmetica.* Ginn. $5.00.

A bibliography of printed arithmetics up to 1601, with a description of the most important of the early works, and with many illustrations.

SMITH, D. E. and KARPINSKI, L. C. *The Hindu-Arabic Numerals.* Ginn. $1.60.

This is the first attempt that has been made to bring together the various theories and the evidence as to the origin of our numerals. It contains many facsimiles from ancient inscriptions and manuscripts.

SMITH, D. E. and MIKAMI, Y. *History of Japanese Mathematics.* Open Court. $2.00.

This is the first work to bring before American and European readers any extended history of Japanese mathematics. It covers the entire period from ancient to modern times and is profusely illustrated.

RECREATIONS IN MATHEMATICS

"A SQUARE" (ABBOTT, P.). *Flatland.* Little, Brown. $1.25.

A charmingly written popular treatment of the fourth dimension.

ANDREWS, W. S. *Magic Squares and Cubes.* Open Court. $1.50.

The only satisfactory treatment of this interesting subject in English.

BALL, W. W. R. *Mathematical Recreations.* Tenth Edition. Macmillan. $3.50.

The best general work on this subject that we have in English.

DE MORGAN, A. *Budget of Paradoxes.* Revised by DAVID EUGENE SMITH. 2 vols. Open Court. $5.00.

One of the most curious satires on circle squarers and others of this class that has ever appeared.

DUDENEY, H. E. *Amusements in Mathematics.* Thomas Nelson & Sons. $1.75.

A large and interesting collection of puzzle problems from arithmetic, algebra, and geometry.

JONES, S. I. *Mathematical Wrinkles.* S. I. Jones, Gunter, Texas. $2.10.

A good book to have for work with mathematics clubs.

LICKS, H. E. *Recreations in Mathematics.* Van Nostrand. $1.50.

Another source of material for mathematics club programs.

SCHUBERT, H. *Mathematical Recreations.* Open Court. 75 cents.

More scholarly than most popular works of this kind in English. The treatment of the fourth dimension is more serious than usual in such cases.

WEEKS, R. M. *Boy's Own Arithmetic.* Dutton. $2.00.

An interesting satire on traditional methods of teaching arithmetic. It should be in all high school libraries.

THE TEACHING OF MATHEMATICS

BARBER, H. C. *Teaching Junior High School Mathematics.* Houghton Mifflin. $1.20.

The only book published to date on this topic. It will be helpful to teachers in the junior high school.

BRANFORD, B. *A Study of Mathematical Education.* Revised Edition, 1921. Clarendon Press. $2.50.

The work of one of the inspectors of schools in England, giving some idea of the recent reform movement in that country.

BROWN, J. C. and COFFMAN, L. D. *How to Teach Arithmetic.* Row, Peterson. $1.50.

Contains numerous helpful suggestions on the teaching of the subject.

CARSON, G. ST. L. *Essays on Mathematical Education.* Ginn. $1.20.

One of the few scholarly works of recent years on the teaching of mathematics. It stands for genuine mathematics for its own sake and is progressive in the best sense.

EVANS, G. W. *The Teaching of High School Mathematics.* Houghton, Mifflin. 80 cents.

An interesting work by an excellent teacher.

GRIFFIN, F. L. *Introduction to Mathematical Analysis.* Houghton, Mifflin. $2.75.

A helpful book for teachers in high schools and colleges.

HOWELL, W. B. *A Foundational Study in the Pedagogy of Arithmetic.* Macmillan. $1.60.

Contains suggestions for statistical work in the subject, and some interesting tables prepared as the result of Dr. Howell's investigations. Contains a good bibliography of periodical material on the subject.

JESSUP, W. A. and COFFMAN, L. D. *The Supervision of Arithmetic.* Macmillan. $1.60.

A group of statistical studies concerning arithmetic. Of interest to teachers and supervisors.

KLAPPER, P. *The Teaching of Arithmetic.* Appleton. $1.90.

A handbook for teachers. It covers the arithmetic of the eight grades of the elementary school.

LENNES, N. J. *The Teaching of Arithmetic.* Macmillan. $2.00.

A discussion of educational theories bearing on the teaching of arithmetic, together with suggestions for teaching the various topics.

LIGDA, P. *The Teaching of Elementary Algebra.* Houghton, Mifflin. $1.90.

A new book with many helpful suggestions for teaching algebra.

LOSH, R. and WEEKS, R. M. *Primary Number Projects.* Houghton, Mifflin. $1.20.

A collection of projects and games suitable for number work in Grades 1 and 2.

MCLAUGHLIN, K. L. and TROXWELL, E. *Number Projects for Beginners.* Lippincott. $1.20.

Projects in number and measurement for Grades 1 and 2.

MCNAIR, G. H. *Methods of Teaching Modern Day Arithmetic.* Badger. $1.75.

A discussion of the methods of teaching the various topics in elementary arithmetic.

NUNN, T. P. *The Teaching of Algebra, including Trigonometry.* 3 vols. Longmans. Vol. I, $2.25; Vol. II, $2.60; Vol. III, $2.75.

A modern work, full of suggestions as to motive and applications. The second and third volumes are composed of exercises to accompany the first volume.

OSBURN, W. J. *Corrective Arithmetic.* Houghton, Mifflin. $1.60.

An analysis of errors in arithmetic and an attempt to suggest proper remedial work.

OVERMAN, J. R. *A Course in Arithmetic for Teachers and Teacher Training Classes.* Lyons and Carnahan. $1.60.

A review of the subject matter of arithmetic with suggestions for teaching each topic.

OVERMAN, J. R. *Principles and Methods of Teaching Arithmetic.* Lyons and Carnahan. $1.60.

Gives the fundamental principles of teaching arithmetic with an analysis of the difficulties involved in the several processes.

SCHULTZE, A. *The Teaching of Mathematics in Secondary Schools.* Macmillan. $1.80.

Contains many helpful suggestions for the teacher.

SMITH, D. E. *Teaching of Elementary Mathematics.* Macmillan. $1.80.

Relates to the general field of arithmetic, algebra, and geometry.

SMITH, D. E. *Teaching of Arithmetic.* Ginn. $1.20.

Considers arithmetic in its genetic aspect, and offers numerous suggestions as to the teaching of special topics.

STONE, J. *The Teaching of Arithmetic.* Sanborn. $1.76.

A handbook for teachers covering the work of Grades 1 to 8.

STONE, J. *The Teaching of Primary Number.* Sanborn. $1.32.

A more detailed presentation of the work of the first four grades.

SUMNER, S. C. *Supervised Study in Mathematics and Science.* Macmillan. $1.40.

Of interest to teachers who want further material on supervised study.

SYMONDS, P. M. *Special Disability in Algebra.* Bureau of Publications, Teachers College. $1.60.

A statistical study the conclusions of which will be of interest to teachers.

THORNDIKE, E. L. *New Methods in Arithmetic.* Rand, McNally. $1.50.

An elementary discussion of the learning process as applied to the teaching of arithmetic.

THORNDIKE, E. L. *The Psychology of Arithmetic.* Macmillan. $2.00.

An application of psychology and experimental education to the teaching of arithmetic.

THORNDIKE, E. L. and Others. *The Psychology of Algebra.* Macmillan. $2.40.

A result of the combined efforts of a group of psychologists to solve some of the problems connected with the teaching of algebra.

YOUNG, J. W. A. *The Teaching of Mathematics.* Revised Edition, 1924. Longmans. $2.20.

A scholarly treatment of the teaching of elementary and secondary mathematics. It has for some years been a standard work and has recently been revised.

TESTS AND MEASUREMENTS

The field of tests and measurements as applied to the teaching of elementary and secondary mathematics has developed so rapidly during the past few years that it is not practicable to include an exhaustive list of books on this subject. For a complete description of the various tests in elementary and secondary mathematics together with a bibliography on the subject, complete to the time of publication, the reader is referred to Chapter XIII of the *Report of the National Committee on Mathematical Requirements,* on "Standardized Tests in Mathematics for Secondary Schools," by Professor C. B. Upton.

Teachers desiring to familiarize themselves with the theory and prac-

tice of educational measurements will be interested in the following more general references:

LINCOLN, E. A. *Beginnings in Educational Measurement.* Lippincott. $1.60.

A simple treatise for the beginner in educational measurement.

MCCALL, W. A. *How to Experiment in Education.* Macmillan. $2.60.

An excellent treatment of practical experimental work in education.

MCCALL, W. A. *How to Measure in Education.* Macmillan. $3.25.

A book which every teacher of mathematics should read; especially the part dealing with tests and scales.

MONROE, W. S. *Theory of Educational Measurements.* Houghton, Mifflin. $2.00.

A clear presentation of the problems of educational measurement, with suggestions for practical work.

OTIS, A. O. *Statistical Methods in Educational Measurement.* World Book Co. $2.00.

An elementary treatment of the subject, intended for teachers.

RUGG, H. O. *Statistical Methods Applied to Education.* Houghton, Mifflin. $2.50.

A book which explains and illustrates the uses and methods of statistics.

WOOD, B. D. *Measurement in Higher Education.* World Book Co. $3.30.

Especially helpful in connection with both the old and the new types of tests and examinations.

GENERAL REFERENCE WORKS

JUDD, C. H. The *Psychology of High School Subjects.* Ginn. $2.20.

A general treatment of these subjects with considerable attention to mathematics.

KEYSER, C. J. *Mathematical Philosophy.* Dutton. $4.70.

A book which every high school and college teacher should own and frequently consult. It is the standard work upon this subject.

KEYSER, C. J. *The Human Worth of Rigorous Thinking.* Columbia University Press. $3.00.

A strong statement of the value of mathematics in the training of the individual.

MONROE, P. *Cyclopedia of Education.* 5 vols. Macmillan. $25.00.

Should be in every library of education. It contains numerous articles on mathematics.

MORITZ, R. E. *Memorabilia Mathematica* or *The Philomath's Quotation-Book.* Macmillan. $4.00.

A collection of striking utterances concerning mathematics made by leading teachers and mathematicians.

PARKER, S. C. *Methods of Teaching in High Schools.* Ginn. $2.00.

An excellent book on general methods, with a specific discussion of mathematics.

Reorganization of Mathematics in Secondary Education, being the Report of the National Committee on Mathematical Requirements under the auspices of the Mathematical Association of America. Sent gratis upon receipt of twenty cents for postage. Address, The Dartmouth Press, Hanover, N. H.

A voluminous report of the studies made by this committee. It should be owned and read by every teacher of mathematics.

RIETZ, H. L. *Handbook of Mathematical Statistics.* Houghton, Mifflin. $4.00.

A technical and scholarly mathematical discussion.

SLOSSON, E. E. *Easy Lessons in Einstein.* Harcourt, Brace & Co. $1.35.

A book which a reader without any extended knowledge of mathematics can appreciate.

THOMPSON, S. P. *Calculus Made Easy.* Macmillan. $1.00.

A simple introduction to the calculus and one that can easily be understood by high school pupils.

WHITEHEAD, A. N. *Introduction to Mathematics.* Holt. $1.00.

A valuable work for any teacher to possess.

YOUNG, J. W. *Lectures on Fundamental Concepts of Algebra and Geometry.* Macmillan. $2.00.

A work that should be read by all teachers of algebra and geometry.

YOUNG, J. W. A. *Monographs on Modern Mathematics Relevant to the Elementary Field.* Second Edition, 1924. Longmans. $4.00.

This work meets a want long felt by teachers. It considers such questions as theory of parallels, fundamental concepts of geometry, the transcendence of e, and the general nature of the algebraic equation.

CARUS MATHEMATICAL MONOGRAPHS

Under the auspices of the Mathematical Association of America there is now beginning the publication of a series of expository presentations of the best modern thoughts and researches in pure and applied mathematics. This publication was made possible through the generous assistance of Mrs. Mary Hegeler Carus and the monographs are issued at a nominal price. Teachers who wish to keep in touch with the progress of modern mathematics should avail themselves of the opportunity of acquiring the works as they appear. They are published by The Open Court Publishing Company of Chicago.

MATHEMATICAL JOURNALS FOR TEACHERS

The American Mathematical Monthly. Lancaster, Pa. $4.00 per year.

Besides articles of special interest to teachers of mathematics this journal contains a department devoted to problem solving. Official organ of the Mathematical Association of America. Valuable to teachers in normal schools, in high schools, and particularly in colleges. Contains reviews of current mathematical literature. Very helpful in arranging programs for mathematics clubs.

The Mathematics Teacher. Lincoln School, 425 West 123rd St., New York City. $2.00 per year. In clubs of 25 or more, $1.75 per year.

This journal is published eight times a year under the auspices of the National Council of Teachers of Mathematics. It contains numerous articles on the teaching of elementary and secondary mathematics and should be read by every teacher of mathematics interested in these fields.

School Science and Mathematics. Mount Morris, Illinois. $2.50 per year.

Each month several articles in this publication are devoted to questions relating to the teaching of high school mathematics. The journal also reviews new text-books and contains a problem department.

PORTRAITS OF MATHEMATICIANS

SMITH, D. E. *Portraits of Eminent Mathematicians.* Open Court.

The sets include portraits of Pythagoras, Euclid, Archimedes, Descartes, Newton, Napier, Pascal, and others. They are of a size that allows for framing, and are suitable for the decoration of a classroom. The portfolio as a whole is out of print, but certain portraits can be supplied by the publishers.

STEREOPTICON SLIDES

Teachers College furnishes at cost a set of stereopticon slides on the history of mathematics, including all of the illustrations in Professor Smith's *Rara Arithmetica,* and many of those in his *History of Mathematics.* A descriptive circular of these slides will be sent upon application to the Bureau of Publications, Teachers College.

COLLEGE NEWS

TRUSTEES

At a meeting of the Board of Trustees of Teachers College on Tuesday, February 10, the following promotions were made in the Faculty of Education: James F. Hosic, Ph.D., from associate professor to professor of education. J. Ralph McGaughy, Ph.D., from assistant professor to associate professor of education. Carter Alexander, Ph.D., from research associate, Institute of Educational Research, to associate professor of education. Daniel H. Kulp, Jr., Ph.D., from associate in educational sociology to assistant professor of education. Percival M. Symonds, Ph.D., from associate in education to assistant professor of education.

The following promotions were made in the Faculty of Practical Arts: Isabel M. Stewart, A.M., from associate professor to professor of nursing education on the Helen Hartley Foundation. Elizabeth C. Burgess, B.S., from instructor to assistant professor of nursing education.

Professor Peter W. Dykema, visiting professor of music education during the current year, was appointed professor of music education, this appointment to become effective at the close of his present engagement.

Sabbatical leave has been granted during 1925-26 to the following-named members of the Teachers College Faculties: For the Winter Session, Professor E. H. Reisner. For the Spring Session, Professors Mabel Carney, Elizabeth C. Cook, Elbert K. Fretwell, Milo B. Hillegas, and Charles J. Martin.

Professors Azubah J. Latham, Willystine Goodsell, Mary T. Whitley, Anna W. Ballard, and Elizabeth C. Cook were transferred from the Faculty of Practical Arts to the Faculty of Education.

The Trustees established the "Detroit Scholarship and Student Loan Fund" on a foundation provided by a gift of $1,000 per annum from Miss Mercy J. Hayes. The object of the Fund is to provide advanced teacher training for the teachers of the intermediate and senior high schools of Detroit, Michigan. The award of Scholarships and the assignment of loans from the Fund will be under the control, subject to the action of the Trustees and Faculties of Teachers College, of a committee representative of the teachers of Detroit.

The request of Professor M. Adelaide Nutting and Professor Charles H. Farnsworth to be retired from active service at the close of the current academic year was granted. Professor Nutting was appointed emeritus professor of nursing education, and Professor Farnsworth, emeritus professor of music education, to become effective from the date of their retirement, on July 1.

The budget for the fiscal year 1925-26, for the maintenance and operation of Teachers College and its Schools, amounting to $2,277,468.00, and for the operation of the Teachers College student residences and lunch rooms, $559,348.00—a total of $2,836.816.00—was adopted.

ADVISERS OF WOMEN

In February Professor Sarah M. Sturtevant attended the Department of Superintendence at Cincinnati, where she spoke before the high school section of the Association of Deans of Women. En route to Cincinnati, at the invitation of Mrs. Clara Brumback, dean of women, Professor Sturtevant visited Dennison University at Granville, Ohio. During her visit she spoke twice before the student body and addressed a meet-

ing of the local organization of the American Association of University Women.

Professors Sturtevant and Gunther, between the Winter and Spring Sessions, visited Radcliffe, Tufts, and Wellesley colleges and the Garland School of Home Making, all in Boston or its vicinity, in order to study conditions in housing.

A recent guest in the major course for Advisers of Women and Girls was Miss Mary Yost, dean of women at Stanford University. At a luncheon held in her honor in the dining-room of Teachers College, Dean Yost talked before the class informally concerning some of the problems peculiar to the work of a dean of women in a co-educational institution.

A recent visitor to the group for Advisers of Women and Girls was Miss Lillian Schoedler, executive secretary of the National Amateur Athletic Federation of America. Advisers of girls in the field who desire help with problems connected with athletics, can get interesting material by writing to this organization, which has headquarters at Room 1712, 110 East 42nd Street, New York City.

Mrs. Katherine Osborne, founder and organizer of the Boston Student Union, spoke recently to the class studying problems in the education of women and girls. Mrs. Osborne has established in Boston very delightful housing centers for girls who come to that city for special study in art. She aims to provide for the young women in her charge beautiful surroundings and activities which will lead to a love of the beautiful. She showed to the class in Teachers College some very unusual scrapbooks made by her girls at slight expense. One of these contained pictures of bridges collected for beauty of line and now said by the students of the Boston School of Technology to be the finest collection of pictures of bridges in this country.

The Advisers Club has this semester added eight new names to its roll of members. The program committee, headed by Miss Jessie Oldt, of Spokane, has provided some unusually interesting speakers for the meetings. On February 5, Miss Helen Clarkson Miller, assistant principal of Miss Spence's School of New York City, spoke before the group on "A Close-Up View of the League of Nations." Since Miss Miller attended the opening session of the League of Nations at Geneva last September she was able to give some first-hand observations on the personalities and proceedings which made up the conference. Following her address, Miss Miller met the members of the Club at an informal reception. Miss Eliza Butler, head of Johnson Hall, was the guest of honor for the evening.

Other persons who are to speak before the Club during the semester are Dean Russell and Professor Kilpatrick of Teachers College, Dean Gildersleeve of Barnard, and Dr. Katherine Bement Davis.

The group will spend the week-end of April 17-19 at the new Alumnæ house at Vassar College, Poughkeepsie, where they are meeting with some of the faculty members and students of Vassar in a conference on "Housing and Its Relation to the Work of a Dean."

EDUCATIONAL ADMINISTRATION

The legislature of Rhode Island has passed the bill reorganizing the school system of Providence as proposed in the survey conducted by the Division of Field Studies of the Institute of Educational Research during the past year. The bill which has been signed by the governor provides a board of education of seven members instead of a board of thirty-three; financial independence for the board of education by granting them without appeal to the council a budget not to exceed 35 per cent of the tax revenues of the city for the next three preceding years; the transfer of the health service to the board of education; and the control of the school building situation by providing that the board of education shall present the needs of the new school buildings to the council for their action in furnishing the

necessary funds, and that if the council fails to accept the building program proposed by the board of education, the matter be submitted to a vote of the people. The election of members of the board is on a non-partisan ballot.

Professor George D. Strayer spoke before the Chamber of Commerce in Buffalo on Saturday, February 21, on the financing of the public schools of that city.

The Administration Club met at the home of Dr. and Mrs. Strayer on Friday, March 6. The members of the group discussed the question of the cooperation of the public schools in the development of a program of religious education.

The members of the first major course are entering enthusiastically upon the work of a survey of the schools of Cranford, N.J. A comprehensive inquiry is being conducted and members of the group are having to consider practically all of the problems which occur in the work of the superintendent of schools.

All of the members of the staff of the department attended the meeting of the Department of Superintendence in Cincinnati. Many of the students were present and report a most interesting convention.

The members of the staff were responsible, as is customary, for the organization of the Teachers College dinner held in connection with the meeting of the Department. Eight hundred former students were served dinner in the spacious Roof Ball Room of the Gibson Hotel and a hundred others came in to hear the addresses after the dinner.

Professor John W. Hall, dean of the School of Education of the University of Nevada, was a most acceptable toastmaster. Professors Reynolds, Rose, and Kilpatrick represented the faculty of Teachers College and Miss Florence Hale, agent for rural education in the State of Maine, Mr. J. M. Gwinn, superintendent of schools in San Francisco, and Mr. Jesse H. Newlon, superintendent of schools, Denver, represented the alumni. Dean Russell spoke most interestingly of the work of the College and of the fundamental problems confronting the American people, as related to their public school system.

The report of the survey of the Watertown, N.Y., school system has just come from the press. This inquiry was completed in January and presents a comprehensive review of the school situation in that city.

Professor Strayer reports an interesting meeting of the Legislative Commission of the N.E.A., of which he is the chairman, in connection with the meeting of the Department of Superintendence. It was voted at this meeting of the Commission to ask authorization from the National Education Association to divide the program which has been supported during the past six years in two parts and to draw bills to be presented at the next Congress, one establishing a department of education and the other proposing further federal aid for public education. The Commission also authorized Professor Strayer to call a conference in Washington of those who favored the creation of a department of education, but who have opposed the idea of further federal aid to sit with members of the Legislative Commission in drafting the bill to create a department of education.

Dr. McGaughy attended a meeting of the Central Ohio Supervision Conference at Ohio Wesleyan University, Delaware, Ohio, on Friday, February 20.

The survey of school finances of White Plains and of the other cities of Westchester County has been delivered to the Board of Education of White Plains. It is expected that the report will be available in printed form in a short time. The survey was made under the directorship of Dr. Strayer. Dr. McGaughy had charge of the field work and wrote the survey report.

Professor Strayer spoke before the general session of the Department of Superintendence on the subject of "The Superintendent of Instruction and the Business Manager of Schools—An Anomaly." His presentation of the disadvantages of dual control developed a

great deal of discussion not only at the meeting but in the press, particularly of those cities now operating under dual control.

Dr. Engelhardt, who is on leave this semester, is spending the month in the South visiting school systems.

EDUCATIONAL PSYCHOLOGY

Professor Mary T. Whitley gave a talk early in February at the local institute of the State League of Nursing Education, her topic being "Teaching Students Some Necessary Study Habits."

Professor Leta S. Hollingworth has been appointed a member of the Child Welfare Committee of the Division of Anthropology and Psychology of the National Research Council.

ELEMENTARY EDUCATION

The Multi-Mental Scale

The demand of educators for greater accuracy of measurement led to the development of standard tests of single mental functions. This increased accuracy of measurement, but revealed how great the inaccuracy still was. The demand for greater accuracy thus awakened led to the development of batteries of tests printed together in a single booklet. The insufficiency of the greater accuracy thus obtained led to the development and application of the techniques of multiple correlation, partial correlation and regression equations to certain of these test batteries. Along with this went the development and selection of better and better test types. But again the demand rose above achievement. At last it appeared that there was just one way to meet the demand and that was to increase greatly the number of test items and consequently, the amount of testing time required from pupils. But many educators have been unwilling to pay this price for the accuracy they demand. In an effort to make short tests of high accuracy, Professor William A. McCall and his students have been engaged in an elaborate research extending over a year. These researches have opened up new lines of improvement which are very promising. The results of these researches were reported by Dr. McCall at the recent closed session of the Educational Research Association in Cincinnati. The Multi-Mental Scale, constructed with the aid of these new techniques and designed for the rapid measurement of general mental-educational ability in grades 2 through 9, will be published shortly by the Bureau of Publications, Teachers College.

Professor Annie E. Moore reports a very large and enthusiastic meeting of the National Council of Primary Education at Cincinnati, February 24. Much of the success of the meeting was due to the excellent arrangements made by the local committee. The women administrative officers and the primary teachers of Cincinnati contributed greatly to the plans for the delightful luncheon as well as the program. This was the tenth anniversary of the organization and there was an interesting coincidence in the fact that the first meeting in 1915 took place in Cincinnati.

The main subject of discussion was the effect upon the mental and physical health of children of the constant interruptions due to the typical short-period program. The advisory committee on the Council are planning to extend this study during the coming year to include an investigation as to the effects of various other methods of organization.

A sincere tribute was paid to the retiring president, Miss Ella Victoria Dobbs, who has served ten years. Miss Lucy Gage, of Peabody College, is the new president and much may be expected from her energetic and skilled leadership.

Miss Lelah Mae Crabbs gave the afternoon address before the Ohio Kindergarten Association meeting in Cincinnati, February 21. She spoke on "Measurable Factors in Kindergarten Education."

Miss Crabbs was also invited by the educational authorities in Cincinnati to become one member of a committee of three to evaluate and report upon the magnificent processional presented by

the Cincinnati children before the Department of Superintendence, depicting in a series of episodes the spirit of beauty and happiness in the public schools.

An experimental edition of the Horace Mann Supplementary Arithmetic for Diagnostic and Corrective Work, written by Professor Milo B. Hillegas, Miss Mary G. Peabody, of the Horace Mann School, and Miss Ida M. Baker, of the State Teachers College, Fresno, California, has recently appeared from the press.

FOODS AND COOKERY

Miss Anna Barrows gave two demonstrations before the Parents Association of the Morningside Presbyterian Church during February. Her subjects were "Dairy Products" and "Fruits and Vegetables."

Miss Bertha E. Shapleigh gave two lecture-demonstrations before the Institute of Arts and Sciences on February 6 and 16 on "Meats—The Use of the Casserole" and "Fish."

On February 21 Professor May B. Van Arsdale gave an address on "Science and the Art of Cookery" at a conference of Food Service Directors of the Young Women's Christian Association, held at the National Board in New York City.

Miss Mary Agnes Davis is writing a series of articles on the School Lunch for the magazine, *Normal Instructor and Primary Plans.*

Miss Ulla Christensen, of Denmark, visited various departments of the School of Practical Arts during the last week of February. Miss Christensen came to the United States, through Dr. Lund of the International Education Board, to make a study of extension work.

On Tuesday evening, February 24 the students in Foods and Cookery were invited to have after-dinner coffee, served by the catering class, at seven o'clock. This was followed by a delightful hour in Milbank Chapel when Miss Emma Condit gave readings from Dickens and Mr. Willis Alling played the organ.

HISTORY

Professor J. Montgomery Gambrill attended the meeting of the Board of Directors of the National Committee on the Social Studies and also the committee directing an investigation for the Commonwealth Fund on the social studies in normal schools and teachers colleges, held in Cincinnati during the meeting of the Department of Superintendence.

Mr. Ned Dearborn is executive secretary f the committee. The committee is gathering facts about curricula and methods with a view to critical discussion and appraisal and probable constructive recommendations about curricula in the social studies in state and city normal schools and teachers colleges.

HOUSEHOLD ARTS EDUCATION

While in Salt Lake City during her visit to the Pacific Coast in January, Professor Cora M. Winchell had the privilege of meeting with Mrs. George Bacon, president of the Women's Civic Center Association of that city. This organization has developed a very effective program of work for women along lines of home-making in a section of the city which offers a real opportunity for constructive work.

An especially interesting study throughout the trip was that of the varying emphases and interpretations of home economics as reflected in the various college and school curricula.

While on this trip to the Coast Professor Winchell spoke before the Teachers College alumni and the home economics teachers in Seattle, Washington; before the Home Economics Club in Portland, Oregon; to the teachers of home economics in Alameda, California; to the students and faculty, and the American Association of University Women in Corvallis, Oregon; to the Teachers College Alumni Club in Los Angeles; and to the home economics teachers in Denver, Colorado.

Miss Edna Skinner, in charge of home economics at Massachusetts Agricultural College, has invited a group of three

women to confer in April with the home economics staff in relation to the proposed curriculum for a home economics major. Professor Winchell has been granted by Teachers College the opportunity of responding to Miss Skinner's invitation to serve at this conference.

In May Professor Winchell will speak before the Rhode Island Home Economics Association in Kingston on the subject, "Recent Developments in Home Economics."

Professor Anna M. Cooley spoke at Temple University, Philadelphia, on March 18 and has engagements in Boston later in March.

HOUSEHOLD ECONOMICS

Professor Benjamin R. Andrews spoke before the South Bend, Indiana, Alumni Club on February 27. The meeting was held at one of the junior high schools in that city and attended by about thirty graduates of the College. In the absence of Superintendent Borden, Mr. Williamson presided. The dinner was served by the home economics department of the school.

The following night Dr. Andrews spoke before the Ann Arbor, Michigan, Teachers College Club. This meeting was arranged by Miss Pearl Macdonald and Miss Jane Newcombe, the proprietors of the Green Tree Inn, which adjoins the University of Michigan campus. They were the hostesses of the Club at the dinner meeting which was held at the Inn.

On February 1 Professor Andrews spoke before a community meeting at Rose Valley, Pennsylvania, on "Our Homes" and before the Woman's Club at Leonia, New Jersey, on February 19 on "Financing the Home."

KINDERGARTEN—FIRST GRADE EDUCATION

The Lower-Primary Club held its spring meeting in the Kindergarten Room on the afternoon of February 17. This meeting was a "welcome home" to Professor Patty Smith Hill, who spoke for a few minutes about her European trip and gave a cordial greeting to new students registered for the Spring Semester. On March 2 the Club met with Dr. William A. McCall for an hour's discussion of the psychological and philosophical principles of experimentation.

Professor Hill and Miss Mary Reed attended the Department of Superintendence meetings at Cincinnati, February 22 to February 26.

The second series of radio lectures on "Character Building" given under the auspices of the Home Study Department of Columbia and broadcast from WEAF on Wednesdays at 11:30, is nearing completion. The concluding lecture will be given on March 18, when Professor Hill will speak on "What Grown-Ups May Learn from Children."

NORMAL SCHOOL EDUCATION

Professor E. S. Evenden spoke before the American Association of Teachers Colleges at the Department of Superintendence meeting at Cincinnati on "Building Standards for Normal Schools and Teachers Colleges." Dr. Evenden is a member of the Committee on Standards and Surveys of the Association.

President L. B. McMullen, of the State Normal School at Flagstaff, Arizona, also spoke before the Association, presenting a preliminary report on "The Teaching or Service Load in Normal Schools and Teachers Colleges." Mr. McMullen is an associate in normal school education at Teachers College this year and is making a study of this subject with the coöperation of the Committee on Standards and Surveys of the Association.

The Teacher Training League of Teachers College reports the election of the following new officers for the spring semester: President, Mr. J. M. Smith (Louisiana); vice-president, Miss Edna Pollock (Iowa); secretary, Miss Virginia Porter (Virginia); treasurer, Miss Mary Meek (South Dakota).

NUTRITION

Professor Henry C. Sherman spent the latter half of February lecturing at

Iowa State College of Agriculture, State University of Iowa, University of Minnesota, University of Illinois, University of Michigan, and Ohio State University. At Ames, Iowa, he also lectured before the Ames Section of the American Chemical Society and the Ames Section of Sigma Xi.

Professor Mary S. Rose is on sabbatical leave for this Spring Session.

Dr. Francis Gano Benedict, director of the Nutrition Laboratory of the Carnegie Institute of Washington, with whom this department is coöperating in the investigation of the basal metabolism of the albino rat, gave a lecture at the College on March 3 on "Alcohol and Human Physiology," presenting the results of studies of the effects of alcohol, both physiological and psychological, which have been carried out in the Nutrition Laboratory during the past few years.

A recent letter from Miss Harriet Stone, who assisted in nutrition last year and who began work last September in Hawaii as Territorial Director of Nutrition, contains an interesting account of nutrition work in Hawaii: "The first organized nutrition work in the schools of Hawaii was started at the beginning of the school term in 1921, in two of the largest public schools in Honolulu. The Social Service Bureau introduced the work into these schools as an experiment and as a demonstration to the community. There was much doubt whether a nutrition program could be practical in schools where there was such a mingling of races with different habits and customs.

"A height-weight survey was made in these two schools, in each of which there were enrolled about 1100 children,—Chinese, Japanese, Korean, Filipino, Hawaiian, Portuguese, Spanish, and a few white children of Scotch, English and German descent.

"Nutrition classes were organized in these schools and two hundred of the worst cases of malnutrition were taken care of in the classes. The results of this intensive work proved the value of such a program in the school and the work has developed rapidly in the past three years.

"In 1924 the Department of Public Instruction took over the direction and supervision of the nutrition work in the schools and it is now a part of the regular school program.

"At the present time there are about 55,000 children in the public schools of Hawaii and 25,000 of these are now included in the nutrition program. Our program is more extensive than intensive because our department is not large enough yet to respond to all the calls from the schools. We have reached only the larger and more accessible schools of the islands. There are 175 public schools in the territory and 148 of these, on four of the islands, have organized and supervised nutrition work.

"All of the children in these schools are weighed and measured every other month, and checked up with average height-weight standards. Reports are sent home to the parents and a follow-up program is carried on in the school. Special attention is given to the underweight children. A mid-morning lunch of milk and crackers is served at the school and all underweight children are urged to have it. A half-hour rest period is given to all children in the first, second and third grades and to the underweight children in the higher grades wherever this has been possible. Many of the children walk long distances to school. It is not uncommon to find children walking from four to seven miles to and from school in our rural districts, and after the public school is dismissed, attending their own language schools for an hour. So their day is a long one.

"Instruction in food and health habits is given to all the children in connection with hygiene lessons. A large proportion of the children here must be taught to drink milk, as many of them have never tasted it in their homes. They do learn, however, and the milk-drinking habit is rapidly growing. When the work was first started in 1921 we had difficulty in getting 200 half-pints of milk used per day as mid-morning

lunches. Now the schools of Honolulu are buying over 5000 half-pint bottles daily for mid-morning lunches. There is no free milk in the schools now; all of it is paid for by the children.

"Nutrition classes have been organized in some of our schools and are conducted by trained nutrition teachers. These children are given physical examinations by some of our local physicians, who also attend and conduct the classes every other week. Parents are urged to attend the classes, but where this is impossible the nutrition teacher makes visits to the home. We have very good coöperation with the public health nurses and the local doctors.

"The individual teachers in public schools are keenly interested and are doing their share to help establish health habits and to improve conditions. Though our work has only just begun, we are getting results and we expect to get better results as we are able to make a more intensive program."

PHYSICAL EDUCATION

Dr. Thomas D. Wood attended the Conference on the Training of Teachers for Health Education, held February 10 to 21 in Cincinnati under the joint auspices of the Committee on Health Problems in Education and the American Child Health Association. On the afternoon of February 23, at the request of Superintendent William McAndrew, Dr. Wood gave a talk in the program of the section on "Life and Health."

On February 27 Dr. Wood gave an address at the Battle Creek School for Physical Education, Battle Creek, Michigan.

RURAL EDUCATION

Professor Mabel Carney spent six weeks between December 20 and February 1 in lecturing and visiting teacher-training institutions on the Pacific Coast. Her initial engagement was at Portland before the Oregon State Teachers' Association on December 30-31. Other addresses and visits were made at Bellingham, Washington; at Monmouth and Corvallis, Oregon; and at various points in California, including Chico, Berkeley, Stanford University, San Jose, Santa Barbara, San Diego, and Los Angeles. On the return trip Professor Carney stopped two days at the Normal School in Tempe, Arizona, and another day in the San Luis Valley of Colorado where some of the best consolidated schools of the United States are to be found.

The special lectures arranged for the class in rural sociology this year have added greatly to the interest of the course. Among the recent speakers brought to the College in this way were: Dr. Edmund deS. Brunner, director of the Institute of Social and Religious Research, New York City; Mr. B. Y. Landis, Federal Council of Churches, New York City; Professor G. F. Warren, Cornell College of Agriculture, Ithaca, New York; Mr. Aaron Sapiro, of Chicago; and Dr. Warren H. Wilson, of the Presbyterian Board of National Missions.

Miss Elizabeth K. Rucker, of Darlington Heights, Virginia, former student in rural education and president of the Rural Club, was married on February 28 to Professor Thomas J. Smart of the University of Kansas. Both Mr. and Mrs. Smart are well known throughout the field of rural education and their many friends in Teachers College and elsewhere offer congratulations and wish them well.

Interesting reports have been received from time to time from last year's students in the field. Among these have come messages from H. A. Tape and Leila T. Linder, principal and assistant principal of the Lincoln Consolidated Training School at Ypsilanti, Michigan; Virginia Harwood, rural school supervisor, Caroline County, Denton, Maryland; Minnie B. Follett, rural director, Normal School, Bemidji, Minnesota; Annabel Snyder, State Agricultural School, Cobleskill, New York; Mary Eva Duthie, Extension Division, Cornell University, Ithaca, New York; Amelia Bauch, Rural Training School,

Paw Paw, Michigan; Pauline Camper, Normal School, Farmville, Virginia; and Jewell Swain, rural school supervisor, Duval County, Jacksonville, Florida.

The world-wide existence and appeal of rural education is clearly evidenced also in letters from former rural students abroad. Among those recently heard from are Ethel Black, of Detroit, Michigan, who is now spending a year in Ginling College, Nanking, China; Frank J. Gilliam, Belgian Congo, Africa; A. E. Harper, Moga Training School, Moga, Punjab, India; and Mary Hurlbut, Lisbon, Portugal.

SECONDARY EDUCATION

Professor Thomas H. Briggs and Professor Elbert K. Fretwell attended the annual meeting of the Department of Superintendence at Cincinnati. Professor Briggs appeared on the program, addressing the members of the National Association of Secondary School Principals on "What Becomes of High School Principals?"

Among the recent appointments of the Board of Trustees of Teachers College was the promotion of Dr. Percival M. Symonds from associate in education to assistant professor of education.

At a meeting of the Secondary Group on March 23 Dr. John L. Tildsley, district superintendent of New York City, in charge of high schools, addressed the members on "Individualizing Pupils in Large High Schools," a section from the Survey of New York High Schools.

In March students in the department had the privilege of hearing Miss Helen Parkhurst speak on the Dalton Plan. Miss Parkhurst is principal of the Children's University School in New York City and is well known as an authority on this form of education.

The Annual Camp Leadership Course was resumed on March 9, continuing for eight consecutive Monday evenings. A camp lasting one week will be run in connection with the course, of which Professor Fretwell is director.

On January 10 Professor Briggs addressed the Tawse Club at Teachers College on "Unsolved Problems in Curriculum Making," and on February 6 he spoke before the local chapter of Phi Delta Kappa on "The Junior Schools of San Antonio."

Professor Symonds' Partial and Multiple Correlation Chart has been published by the Bureau of Publications, Teachers College. This chart is a job analysis sheet to facilitate the computation of partial and multiple coefficients of correlation and regression coefficients involving three variables.

Professor Frank M. McMurry and Professor Briggs recently completed a survey of the Scarborough School and have made a report of their findings, with recommendations, to the trustees and patrons of the school.

During March Professor Fretwell gave an address before the Harvard Teachers Association at Harvard University on the subject of "Education and the Schools' Extra-Curricular Activities."

Professor Fretwell spent a week in Denver, Colorado, working with committees from each of the junior and senior high schools in developing still further constructive plans for carrying on the extra-curricular activities of these schools. As a part of this work Professor Fretwell visited all of the junior and senior high schools and spoke at an assembly of teachers in these schools.

TEXTILES AND CLOTHING

Various members of the staff have been making trips and giving talks to groups of women in the interest of textiles and clothing.

Professor Laura I. Baldt and Miss Esther M. Cundiff spent a week in Boston visiting, through the courtesy of Miss Mary Walker, cotton mills of the Boston and Nashua Manufacturing Companies. They also studied the educational work in William Filene's Sons and Company. While there they were entertained by the educational staff and also by Mrs. Lutes of the Priscilla Proving Plants. Miss Cundiff also visited the public schools in Dorchester and Roxbury.

Mr. M. D. C. Crawford gave a talk on December 8 to the students in tex-

tiles and clothing in explanation of the historic costume dolls prepared and exhibited at the College by Bonwit Teller Company. Mr. Crawford was introduced by Miss Mary Evans of the staff.

Mrs. Evelyn S. Tobey has been giving a series of talks to home economics workers at Cornell University, New York State Farmers' Week, on the subject of "Overhead Expense"—the selection of a hat. She also spoke recently at the University of Vermont during the State Conference of Home Economics Teachers, of Secondary Education.

Miss Lillian H. Locke has spoken at the meeting of the Colonial Dames on the subject of "Personality in Dress," and to the students of the Bridgeport, Connecticut, Normal School on the subject of the "Clothing a Teacher Should Wear in the School-room," and again to the contemporary club of Newark, New Jersey, on "Dress Appreciation."

Miss Cundiff has recently spoken before the Civic Association of Teaneck, New Jersey, on the "Use of Patterns."

HORACE MANN SCHOOL

A committee of teachers of the Horace Mann School has under preparation a bulletin on "Training in Citizenship in the Horace Mann School," which will soon be issued as one of the Horace Mann Studies in Education. This bulletin of about one hundred and fifty pages will deal with concrete illustrative material showing the method and results of citizenship training from the Kindergarten to the Senior year in the Horace Mann School.

Dr. Harry Emerson Fosdick gave a course of short addresses to the school during the month of March on the general topic of "Character Building."

Among the various activities of the Horace Mann Parents Association is a Child Study Group which meets every two weeks. While this group is not affiliated with the Federation for Child Study, it is a direct outgrowth from it through the efforts of a parent who has taken active part in the Federation. As an example of the range of interest in the subjects considered, the following topics have already been discussed this season: "Constructive Discipline," "Self-Discipline," "The Nursery School," "Standards of Conduct," "To Whom Should We Delegate Authority?" "Truth, Falsehood and Imagination," "How the New Education Endeavors to Change Behavior." At the first meeting in March, on "Aims of the New Education as Shown in the Leading Schools of the City," Dr. Otis W. Caldwell, principal of the Lincoln School, spoke on the experiments in elementary and secondary education in that school.

In response to repeated requests and questions from earnest mothers, Miss Caroline Stackpole, of the department of biology, Teachers College, addressed a special meeting in March on "How to Give Sex Information to Our Children."

Dr. John Erskine of Columbia University recently gave an inspiring address to the Horace Mann Parents Association on "The Allied Arts and Elementary Education."

Mr. Henry C. Pearson, principal of the Horace Mann School, attended the meeting of the Department of Superintendence at Cincinnati, and visited several schools in the Middle West.

HORACE MANN SCHOOL FOR BOYS

Mr. Robert F. Payne, member of the department of science and in charge of the Boy Scout work in the Boys' School, will give a series of lessons for scoutmasters in Scranton, Pa. This course, which will continue for six or seven weeks, is similar to the one which Mr. Payne has previously given under the direction of the Manhattan Council.

The Boys' School has suffered a genuine loss in the death of Kenneth W. Rogers, for some time a member of the staff of the school. Mr. Rogers, who had more recently been connected with Mercersburg Academy in an important administrative position, had for a year been in poor health. His death occurred on February 25.

Mr. Milton M. Smith and Mr. John Mulholland are co-authors of an inter-

esting and readable book, *Magic in the Making*, which is published by Scribner's, and written in a non-technical way and illustrated by excellent cuts.

Under the general direction of the secondary education department of Teachers College, the work being done by graduate students, investigations have been carried on during the past few months in the field of measurement of qualities of leadership. The results of these investigations will be published at a later time.

At a meeting of the Fathers' Association held recently, Professor George D. Strayer was elected president of the organization, and Professor R. G. Reynolds was made a member of the executive committee. By vote of the Association, the officers and the executive committee were commissioned to make an investigation of the whole problem of the salary schedule of the Boys' School.

Principal Charles C. Tillinghast was one of the speakers at the recent meetings of the National Association of Secondary School Principals held at Cincinnati in connection with the meetings of the Department of Superintendence. He spoke on the topic, "Current Problems in Curriculum Analysis."

ALUMNI ACTIVITIES

THE TEACHERS COLLEGE ALUMNI ASSOCIATION

OFFICERS

President: Dr. GEORGE H. REAVIS, Dean, School of Education, University of Pittsburgh, Pittsburgh, Pa.

1st Vice-President: Dr. FANNIE W. DUNN, Assistant Professor of Education, Teachers College.

2nd Vice-President: Miss LILLIAN HUDSON, Assistant Professor of Nursing Education, Teachers College.

Recording Secretary: Miss AGNES BURKE, Instructor, Kindergarten Education, Teachers College.

Corresponding Secretary: Miss EDITH E. SWAN, Executive Secretary, Student Organizations, Teachers College.

Treasurer: Dr. R. G. REYNOLDS, Director, Bureau of Educational Service, Teachers College.

Members-at-Large: Dr. EDWARD S. EVENDEN, Professor of Education, Teachers College.
Mr. FRANK PICKELL, Superintendent of Schools, Montclair, N. J.
Miss M. ANNIE GRACE, 300 Park Avenue, Baltimore, Md.

Alumni Trustees: Dr. EDWIN C. BROOME, Superintendent of Schools, Philadelphia, Pa.
Miss ROXANA STEELE, Director of Training of Supervisors, Western State Normal School, Kalamazoo, Mich.

Alumni Office: Russell Hall, Teachers College, 525 West 120th Street, New York City.

Address all communications to ROLLO G. REYNOLDS, Field Secretary, Teachers College, New York City.

Results of the Alumni Elections

As this number of THE RECORD goes to press, announcement is made of the election by ballot of the following officers of the Executive Committee of the Alumni Association:

President

Mr. ZENOS E. SCOTT, Superintendent of Schools, Springfield, Massachusetts.

Vice-President

Dr. BESSIE LEE GAMBRILL, Associate Professor of Elementary Education, Yale University, New Haven, Connecticut.

Corresponding Secretary

Miss EDITH E. SWAN, Executive Secretary of Student Organizations, Teachers College, Columbia University, New York City.

Treasurer

Dr. ROLLO G. REYNOLDS, Director of Bureau of Educational Service, Teachers College, New York City.

Alumni Trustee

[To be announced after the April meeting of the trustees of Teachers College, and published in the May number of THE RECORD.]

SECRETARY-TREASURERS OF TEACHERS COLLEGE CLUBS

ALABAMA
Miss J. C. Simpson
Florence, Ala.

AMES, IOWA
Miss Julia L. Hurd
Ames, Iowa

ANN ARBOR, MICH.
Miss Edith Bader
1607 Granger Avenue
Ann Arbor, Mich.

ARKANSAS
Mr. W. E. McNelly
Fort Smith, Ark.

BANGOR, ME.
Miss Annie B. McSkimmon
94 Third St.
Bangor, Me.

BATTLE CREEK, MICH.
Mrs. D. R. Dudley
Asst. Superintendent of Schools
Battle Creek, Mich.

BIRMINGHAM, ALA.
Mr. I. R. Obenchain
Glen Iris School
Birmingham, Ala.

BUFFALO, N. Y.
Miss Agnes McCarthy
Technical High School
Buffalo, N. Y.

CALIFORNIA
Miss Ethel L. Salisbury
744 No. New Hampshire Avenue
Los Angeles, Calif.

CHADRON, NEB.
Miss Helen Cromwell
State Normal School
Chadron, Neb.

CHINA (Eastern)
Miss Nina M. Stallings
Soochow, Ku, China

CINCINNATI, OHIO
Mr. E. D. Roberts
Asst. Superintendent of Schools
Denton Bldg.
Cincinnati, Ohio

CLASS OF 1918
Miss Helen Mildred Owen
514-16 Cutler Building
Rochester, N. Y.

CLASS OF 1921
Miss Effie Dailey
318 Glenwood Avenue
East Orange, N. J.

CLEVELAND, OHIO
Miss Catherine D. Ross
1834 Grasmere Avenue
East Cleveland, Ohio

CONNECTICUT
Miss Marion C. Sheridan
711 Orange Street
New Haven, Conn.

DETROIT, MICH.
Mr. C. Louis Thiele
1354 Broadway
Detroit, Mich.

ERIE, PA.
Miss Elizabeth Pfeiffer
615 East 10th Street
Erie, Pa.

GEORGIA
Mr. A. J. Hargrove
Zebulon, Ga.

HARRISBURG, PA.
Mr. H. L. Holbrook
State Department of Education
Harrisburg, Pa.

INDIANA
Miss Geraldine Hadley
774 W. Drive
Woodruff Place
Indianapolis, Ind.

KANSAS CITY, MO.
Miss Jessie McKay
3517 Charlotte Street
Kansas City, Mo.

MACON, GA.
Miss Mamie W. Jones
117 Corbin Ave.
Macon, Ga.

MAINE
Miss Mary Louise Hastings
State Normal School
Gorham, Me.

MASSACHUSETTS
Mrs. E. T. Newall
65 Spring St.
Medford, Mass.

MARYLAND
Miss Bessie C. Stern
Lexington Bldg.
Lexington and Liberty Sts.
Baltimore, Md.

MINNESOTA
Miss Clyde E. Yeaton
1923 Aldrich Ave., S.
Minneapolis, Minn.

MISSOURI
Miss Alma Fletcher
5616 Pershing Street
St. Louis, Mo.

MONTANA
Mr. Freeman Daughters
State University
Missoula, Mont.

NORTH CAROLINA
Mr. L. R. Johnson
111 Steele Street
High Point, N. C.

NORTHERN MICHIGAN
Mr. Sidney Herring
401 North Front Street
Marquette, Mich.

OKLAHOMA
Miss Florence I. Evans
University of Oklahoma
Norman, Okla.

PHILADELPHIA
Miss Erma L. Ferguson
Temple University
Philadelphia, Pa.

PHILIPPINE ISLANDS
Mr. Sabino Taburnor
Bureau of Education
Division of Bataugas, P. I.

PITTSBURGH, PA.
[To be announced later]

RELIGIOUS EDUCATION
Miss Faye Klyver
509 West 121st Street
New York City

SCRANTON, PA.
Miss Ruth L. E. Schener
324 Pittston Avenue
Scranton, Pa.

SOUTH BEND, IND.
Miss Mamie E. Kerner
115 North William Street
South Bend, Ind.

TOLEDO, OHIO
Miss Florence Boughner
Indiana School
Toledo, Ohio

VERMONT
Mr. Kenneth J. Sheldon
Montpelier, Vermont

VIRGINIA
Mr. C. B. Givens
4010 West Street
Richmond, Va.

WEST VIRGINIA
Miss Wilma C. Speare
Marshall College
Huntington, W. Va.

WISCONSIN
Mr. W. W. Brown
631 Monroe Street
Janesville, Wis.

ALUMNI HOME COMING

ALUMNI COUNCIL LUNCHEON

The Alumni Council luncheon was held at the Men's Faculty Club at 12:00 o'clock, February 12. Those present were: Executive committee of the Alumni Association: Dean Russell, Dr. Fannie Dunn, first vice-president, who presided as chairman in the absence of the president, Dr. George H. Reavis, who is ill; Miss Roxana Steele, retiring alumni trustee; Dr. Rollo G. Reynolds, field secretary and treasurer; Professor E. S. Evenden, member-at-large; Miss Lillian A. Hudson, second vice-president; Miss Edith E. Swan, corresponding secretary; Miss Emma H. Gunther, who has recently visited alumni in the field; Miss Olive Moore, proxy for Miss M. Annie Grace, member-at-large; and Miss Lucy Murray, stenographer. Absent members were: Dr. George H. Reavis, president; Dr. E. C. Broome, alumni trustee; and Mr. F. D. Pickell, member-at-large. Club representatives present were: Connecticut, Mr. Clifford Brownell, Mr. Alfred Simpson, and Miss Marion C. Sheridan; Ohio, Miss Anne Rochefort; Missouri, Miss Della Story and Miss Henrietta Wahlert; Maryland, Miss Catherine

Cook, Miss Olive Moore, and Miss Myrtle Eckhardt; Detroit, Miss Florence Stratemeyer and Mr. Emmet Corrigan; Minnesota, Miss Amalia Bengston; Class of 1916, Miss Marguerite Smith; Class of 1917, Mrs. Hazen Hoyt; Class of 1920, Miss Ruth Taft; Class of 1922, Miss Dorothy Brewster; Class of 1923, Miss Gertrude Wood; Class of 1924, Miss Virginia Bluhm; Philadelphia Club, Miss Emma Haigh and Miss Erma Ferguson.

The meeting was opened with a short talk by Miss Dunn, who explained that the Executive Council, made up of representatives of the various Teachers College Alumni Clubs, meets each year for the purpose of transacting the official business of the Alumni Association. A motion was put before the group to the effect that Dr. Reavis be sent a message of good wishes for a speedy recovery from his illness. The motion was seconded and passed.

A nominating committee was appointed by Miss Dunn to confer and report suggestions for a member-at-large of the Alumni Association to fill the place made vacant by the expiration of the term of Dr. E. S. Evenden. The committee upon returning reported the unanimous approval of the nomination of Miss Marion C. Sheridan of Connecticut. It was the consensus of the group that Miss Sheridan be declared elected.

After a few introductory remarks on the intangible but strong bonds by which the alumni of Teachers College are held together, Dr. Dunn called upon the representatives of the clubs to give in three- to five-minute talks on some of the interesting things their clubs have been doing or anticipate for the future. Several representatives were without reports from the secretaries of their clubs but did their best to tell something of the activities of the Teachers College Clubs from their respective home communities.

After a brief talk by Dean Russell on "Curtailment of Enrollment at Teachers College," the meeting adjourned to attend the afternoon's program in the Horace Mann Auditorium.

Business Session

The Business Session of the Annual Alumni meeting was held in the Horace Mann Auditorium at 2:00 p.m. on February 12. Dr. Fannie Dunn, vice-president of the Association presided. The first matter of business was the presentation of a report by the retiring alumni trustee, Miss Roxana Steele, director of training in the State Normal School at Kalamazoo, Michigan. Dr. R. G. Reynolds, field secretary and treasurer of the Association, made his annual report. These reports are published elsewhere in this section.

At the conclusion of these reports, the regular business of the Association was taken up. The report of the alumni trustee was accepted with the recommendation that it be submitted to the Trustees of Teachers College as endorsed by the Association. A vote of appreciation was given to Miss Steele for her splendid service to the Association and to Teachers College. The report of the field secretary and treasurer was accepted as read. The resignation of Dr. Reynolds was accepted and a vote of appreciation for his service was given.

It was voted that the Executive Committee be empowered to create special memberships in the Association for those who do not wish The Record.

General Meeting

At the close of the business session the professional program was taken up and the following addresses given: "The Teachers College Bureau of Elementary Curriculum Research," by Miss Florence Stratemeyer; "Some Recent Tendencies in European Education," by Professor I. L. Kandel; and "Some Practical Aspects of Curriculum Construction," by Professor Milo B. Hillegas.

On account of illness, Dr. Edwin Broome, alumni trustee of Teachers College and superintendent of schools at Philadelphia, was not able to give his address on "The Nation-wide Interest in the Elementary School Curriculum."

At the close of the program Dean and Mrs. Russell received the alumni and students of the College in the Kindergarten Room.

REPORT OF THE ALUMNI TRUSTEE

Extracts follow from the report of Miss Roxana Steele, retiring Alumni Trustee. Miss Steele was Alumni Trustee for 1922-24 and served both the College and alumni admirably during her term.

The problem of organizing the alumni of Teachers College is such a stupendous task that the question, "Is it worth while?" may well be asked. More than 14,000 persons have been graduated from Teachers College and more than 70,000 have attended at least a summer session. Many of these students had an alma mater before coming to Teachers College and most of them are now responsible for furthering the interests of some other educational institution. Home-comings to the College and representative meetings are impractical because of distance and school calendars.

There has been a Teachers College Alumni Association since 1895 and its records are most interesting. One can trace on its pages the expression of love and gratitude for the College, but one also finds the problem of how to perpetuate and to improve the organization. As the years pass, one finds paid clerical help provided for the secretary and later a member of the faculty acting as treasurer. At present Miss Edith E. Swan divides her time between the Alumni Association and the student organizations. Dr. Reynolds serves as field secretary and treasurer for the Association and Miss Emma H. Gunther is visiting in the field and making a study of conditions. Dr. Reynolds has numerous other responsibilities, such as director of the Bureau of Educational Service, secretary of Teachers College, and assistant professor of education. Miss Gunther carries a part-time teaching program.

It is assumed that the president of the Association is to direct and unify the work of these various persons, but this is impossible in practice. The president of the Alumni Association is always some one who holds a full-time position with heavy responsibilities and therefore cannot undertake a thorough analysis of the problem in the hope of suggesting a constructive program. The alumni are busy people and have no time for an organization which does not function. There is a very real question as to what type of organization will function best and whether the same organization will serve the needs of various groups. Some study is needed to determine this.

Certain problems regarding the alumni of Teachers College have come to the front repeatedly, but no solution has been forthcoming because no one person could give sufficient time and study to trace the difficulty to the source. Some have persisted so long that Dean Russell and members of the faculty and officers of the Association begin to question whether there is a solution.

Among the ever-recurring problems is the spring Alumni Conference. Shall it be abandoned since it serves only a limited group? Is there a substitute for this conference which would prove more valuable?

Another persistent problem is the combining of membership in the Alumni Association with the subscription to the TEACHERS COLLEGE RECORD. Many alumni of Teachers College read THE RECORD in their school library and do not become members of the Alumni Association. Can some adjustment be made to fit such cases?

What type of educational service should the College give the alumni? The work of the Bureau of Educational Service is valuable and far-reaching, but the demands within the field of appointments consumes all the time and money set aside for the department. Can other phases of educational service be developed? The experiment in the Service Bureau for Classical Teachers, supported by the American Classical

League and Teachers College, is meeting the needs of a large group of teachers of Latin and Greek. This service is not confined to former students of Teachers College. Between five and six hundred requests for specific help are answered each month. Should Teachers College develop this line of service in other fields? Should such service be on the graduate level? Can the alumni help to determine the policy?

Certain alumni can see from their work in the field what helpful leads the College might take. A number of interested former students recently requested that special study be given in the normal school department of the College to the needs of the critic teacher group.

Now that the TEACHERS COLLEGE RECORD has ten issues a year, there is a greater demand for some one to gather and disseminate through THE RECORD worthwhile news about interesting work which is being done all over the world by graduates of Teachers College. There is an opportunity for some one to assist the Bureau of Publications in ascertaining which articles in THE RECORD could be used to advantage in the form of reprints. Some one must be responsible for the schedule of faculty speakers for the Teachers College Alumni Clubs. This means that the alumni groups must be notified far in advance when a member of the faculty will be in their section of the country.

I am thoroughly convinced of the need of a person to unify the avenues of service to the alumni, to act as a clearing house for all things pertaining to the alumni, and to bring to the attention of the College administration all helpful suggestions and recommendations gathered from the field. To undertake such an experiment would mean a cost of from eight to ten thousand dollars a year for salary and traveling expenses, but we could know at the end of three years which contacts with the alumni were not yielding worthwhile results, which were questionable, and which were proving mutually beneficial. I recommend the experiment for consideration.

There are two specific requests which the alumni have made that I should like to present:

Teachers College is comparatively young, but she has an interesting and important history. Fortunately, most of the persons who might furnish source material are still with us. This condition will continue to be true. In the name of the alumni of Teachers College, I wish to recommend to the Trustees of Teachers College that some especially qualified person be selected to gather the lore of the early days of the College and to record and interpret her growth and her place in educational history.

Another suggestion arises spontaneously from the four winds. "We must have a fine portrait of Dean Russell in the new library." Let us plan for it immediately. Let it be a gift of the present students, the alumni, the faculty, and the trustees of Teachers College.

Respectfully submitted,

ROXANA STEELE,
Alumni Trustee.

REPORT OF THE FIELD SECRETARY

To the Members of the Teachers College Alumni Association:

I herewith submit my report as field secretary for the current year.

The membership in the Alumni Association has kept up in a very gratifying manner in spite of the fact that during the past year the membership fee has been increased from $1.50 to $2.50. During the year we have enrolled about 5,000 different members.

The local clubs are flourishing. At the present time there are forty-one different local clubs scattered in all parts of the country and in foreign lands. There are now organized Teachers College clubs in East China, South Africa and the Philippine Islands.

As most of you know, the alumni office is in the care of Miss Edith Swan and shares the office space with the stu-

dent organizations of the College. During the year a large amount of correspondence has been carried on with alumni in the field. One of the most important activities of this office has been to list the speaking dates of the faculty of the College. With the list of these dates in the office it has been possible to arrange for many members of our staff to meet with local clubs in various part of the country. The correspondence which is necessary to arrange even one of these speaking dates is much larger than one would imagine. The alumni office has been especially active this year in collecting news notes for the TEACHERS COLLEGE RECORD. The TEACHERS COLLEGE RECORD still remains the official organ of the Alumni Association. Beginning with the September, 1924, number, a new policy was adopted by those responsible for THE RECORD. The subscription price was increased to $2.50 and THE RECORD is issued ten times a year. With this new arrangement it seemed advisable that the mailing of THE RECORD be taken over by the Bureau of Publications. This mailing has been done most efficiently by the Bureau and very few complaints from the members of the Association have been received. Those responsible for THE RECORD have been very anxious to learn, if possible, the sort of publications that the alumni desire. They have been particularly interested in knowing the kind of news relative to the College which would be of most interest to the alumni and they have had a real problem in determining the sort of alumni notes which would be acceptable. From various letters which have been received, it is evident that THE RECORD is meeting more nearly the needs of the alumni than ever before.

There has been great activity during the year among the local clubs. Meetings have been held from Maine to California and it has been possible, with the coöperation of the staff of Teachers College, to arrange for more than forty different professors to meet with these local groups. Dean Russell this year met with an especially enthusiastic group in Boston, and Dr. Bagley took the prize for attending the meeting farthest away from the College when he spoke before the Teachers College Club in Los Angeles.

During the year the Alumni Association, in coöperation with the College, tried a new experiment, that of having a representative of the College and of the Association take rather extended trips in various parts of the country. Professor Emma Gunther, of the Faculty of Practical Arts, made three such extended trips. The first two trips have been described in past numbers of THE RECORD and I will not discuss them, other than to say that one was to the Middle West and the second to the Far South, including Alabama and Georgia. Recently Miss Gunther has made a trip into Virginia and North Carolina. She visited alumni in Williamsburg, Harrisonburg and Richmond, Virginia; and alumni in Winston-Salem, Greensboro, Durham and Raleigh, North Carolina. The expense of these trips was borne entirely by the College and the Alumni Association and Miss Gunther made a special effort not only to meet with the alumni and talk over with them their problems, but also to be of such service as she could to the institutions which she visited. Upon her return she gave a report of her trip before a faculty meeting and brought back many useful suggestions.

One problem has arisen which should claim the attention of the Association or of the Executive Committee. A considerable number of former students of the College would like to become members of the Alumni Association, but do not wish to subscribe to the TEACHERS COLLEGE RECORD. The reason for this is that they are at work in institutions where THE RECORD is furnished them. Possibly some arrangement should be made for an alumni membership fee which does not include subscription to THE RECORD.

With your permission, I shall include the treasurer's report at this time.

Balance on hand April 23, 1924	$1,485.44
Income from April 23 to January 26, 1925	353.94
Total income during the year	$1,839.38
Expenditures during the year	925.50
Balance on hand February 5, 1925	$913.88

I mentioned the fact that the mailing of the TEACHERS COLLEGE RECORD had been put entirely into the hands of the Bureau of Publications. When the increased subscription price to THE RECORD was agreed upon it seemed advisable not only to turn over the entire distribution of THE RECORD to the Bureau of Publications, but also to make a new financial arrangement with that Bureau; therefore, upon consultation with the officials of the Bureau, it was decided that at least during the past year, the Bureau of Publications should pay all expenses connected with the subscription of THE RECORD and at the end of the year should turn over to the Alumni Association any profit which might have accumulated. When the new subscription price was announced old subscribers and new ones, up to a certain date, were given the privilege of renewing their subscriptions at the old rate of $1.50, and a very large number responded to this offer. Due to the fact that it costs considerably more than $1.50 to produce THE RECORD, these subscriptions meant a loss. From figures submitted to me by the Bureau of Publications it is estimated that the Alumni Association can expect an income from THE RECORD including this September to July of approximately $3,500 this year. It is estimated further that if the same arrangement be entered upon next year, the income available to the Association will be in the neighborhood of $4,500.

This year, as many of you may have noticed, a new plan of electing officers was put into force. It will perhaps be a surprise to some to learn that the old scheme of election of officers, which included nomination blanks sent to every individual member of the Association and ballots sent at a separate mailing to the same members, cost the Alumni Association in the neighborhood of $1,000 a year. It seemed to those in charge that this was a rather expensive method of electing officers and, therefore, it was determined to try to utilize the pages of THE RECORD this year for the election of officers. Consequently, in the January number of THE RECORD, a nomination blank together with full information was included. These nomination blanks were filled out as in past years and returned to the College. In the February number the attention of the Alumni was called to this new method of electing officers and they were urged to vote by means of the ballots which will be published in the March issue of THE RECORD. It is too early to report the success of this plan of election, but if it proves to create as much interest as the former methods of balloting, it will probably be wise to continue it because of the large sum of money which it saves the Association.

The Alumni Association always has its problems. The one big problem which has always been with us is how we can bring about additional participation in alumni affairs by those who have left the College. The difficulty of maintaining the Alumni Association in a graduate school such as ours is very great. Since my experience with the Association it has been fostered and rather carried along by the College. It seems to me that this is not the proper thing. I believe that the Alumni Association should belong to the Alumni and should be managed by them and adequately supported by the Alumni. Just how this can be brought about is, as I have said, the one big problem which always faces the Association.

The second problem, it seems to me, is to provide for the Alumni Association a full-time person to act as field secretary, one who shall have no other duties to attend to, whose whole effort and enthusiasm can be turned in the direction of developing the Association

and making it serve its members better. For one year I acted in that capacity myself, but since that time various duties have come to me in connection with the College and I now find that I have but very little time to give to the important matters of the Association. It has, therefore, seemed wise and right to me to offer to the Executive Committee my resignation as field secretary. This I do with regret. It has been a real pleasure to work with such a group. It has been a real pleasure to meet with them in various parts of the country and it will always be a privilege to consider myself one of the active members of the Alumni Association and to do what I can to serve its best interests.

Respectfully submitted,

(Signed) R. G. REYNOLDS,
Field Secretary.

CONNECTICUT CLUB

The thirteenth annual meeting of the Teachers College Club of Connecticut was held on February 14, at the City Club, Hartford, following a luncheon. Dr. Albert Meredith, president of the Club, presided.

Dr. Meredith congratulated the Club on the number that was present and then introduced Dr. Robert J. Leonard, director of the School of Education, Teachers College, who was guest of honor. Dr. Leonard gave a delightful address on "New Undertakings." Among other topics, he brought up the work of the Institute of Child Welfare; the scholarships that are being offered; the assistance that is being given to Latin teachers; the Sachs prize for the promotion of scholarship in the secondary schools; the necessity for the curtailment of the enrollment of Teachers College; and the work of the International Institute.

Mr. Alfred Simpson, director of research and surveys, State Board of Education, Hartford, spoke on "Echoes of the Alumni Council Meeting" and suggested a program of meetings for the coming year. Mr. Clifford Brownell, formerly supervising agent, State Board of Education, Hartford, spoke on "Teachers College from a Student's Viewpoint." Mr. Simpson and Mr. Brownell are both graduate students at Teachers College this year.

Mr. J. L. Meader was called on for a few words in regard to the Teachers College group in New Haven. He suggested the formation of similar groups.

The nominating committee consisting of Mrs. Douden, Guilford; Mr. Meader, New Haven; and Mr. Robertson, Milford, brought in the following report which was accepted: President, Miss Maud Keator, director of special education and standards, Hartford; vice-president, Mr. Alfred Simpson, Hartford; and secretary-treasurer, Miss Marion C. Sheridan, New Haven.

A vote of appreciation was expressed to Miss Keator, who had arranged the luncheon.

HARRISBURG CLUB

The Harrisburg Teachers College Club, made up of alumni and former students of Teachers College living in and near Harrisburg, met for a luncheon and short business meeting on Saturday, February 14. Eighteen members were present. Dr. F. T. Struck, president of the Club, presided. The following officers were elected: President, Mr. J. S. Ferguson; vice-president, Miss Lou Hartman; secretary-treasurer, Mr. H. L. Holbrook.

It was decided to hold meetings quarterly instead of semi-annually as heretofore. Dr. Clyde H. Garwood, in a brief address, suggested that the club sponsor the bringing of prominent educators to Harrisburg as a means of keeping in touch with the latest developments in education.

OKLAHOMA CLUB

The Oklahoma Teachers College Club held its last meeting in the form of a banquet at the Huckins Hotel, Oklahoma City, Oklahoma. The president of the Club, Mr. J. R. Barton, presided.

The speakers and the subjects of their talks were as follows: Miss Julia Rob-

ertson of the A. and M. College—"Oklahoma as Viewed by a 'New-Comer'"; Mr. Galen Jones, principal of the High School, Sapulpa—"What a State Teachers College Club Ought to Do"; Dr. A. B. Adams, of the School of Business Economy, University of Oklahoma —"The Columbia University Spirit"; Mr. C. C. Liebler, director of Attendance and Part-Time Schools, Okmulgee —"The High Points of the Summer Session of 1924"; Miss Nora Talbot, dean of the School of Home Economics, A. and M. College—"News Notes of Teachers College"; and Miss Miriam Gerlach, dean of women, University of Oklahoma, Norman—"Extra-Curricular Development."

At the business session which followed, Dr. A. B. Adams was elected president and Miss Florence I. Evans, secretary.

CLASS OF 1918

Helen Mildred Owen, secretary-treasurer, 514-16 Cutler Building, Rochester, N.Y.

Evelyn E. Atwood is a social worker for the Cardiac Committee of New York City.

Sylvia M. Bauer was married to John C. Gabriel on June 16, 1923. She is living in New York City and is doing commercial art work.

Sara Helen Bridge is chairman of the Home Economics Department at the University of Missouri, Columbia, Missouri. She has received her Doctor's degree from Harvard University.

Anna Louise Deatrick was married on October 22, 1924, to Roger I. Mitchell and is living in Rutherford, N.J. From 1918 to 1923 she taught domestic science at the high school in Easton, Pa.

Dorothy Winthrop Emery is teaching household arts at the Ethical Culture School in New York City.

Alma M. Hall is head of the Department of Home Economics at West Philadelphia High School for Girls, Philadelphia, Pa.

Emma C. Hess is teaching home-making in the Bushwick High School, Brooklyn, N.Y.

Edna B. Hindennach was married on June 16, 1923, to Lloyd G. Jenkins. She is now living in Philadelphia.

C. Gertrude Phelps is fourth-grade critic in the Training Department of Michigan State Normal School at Ypsilanti, Michigan.

Elsa Schmidt, who was formerly educational director at Bellevue School of Nursing, is now visiting instructor in schools of Nursing.

Florence Terry is a branch manager for the Colonade Company in Cleveland, Ohio.

Ellen P. Watson is doing private work in individual gymnastics in Spencer, Massachusetts, and is teaching private gymnasium classes in towns where there is no Y.W.C.A.

Gladys Shafer Doyle (Mrs. Charles F. Doyle), who is now living in Pasadena, visited in the East last summer with her little daughter, Nancy.

Born to Olive Kennedy Russell, a second daughter, Marcia Wood Russell, on January 6, 1925. Mrs. Russell is living in Denver, Colorado, and she writes that she likes that city.

Born to Marion Ballou Rust, twin daughters, Marion Ballou and Elizabeth Westfall, on January 18, 1925.

CLASS OF 1924

Sally Serson, President, University of Pennsylvania, Physical Education Department, Philadelphia, Pa.

Gertrude Loudenback (B.S. 1924) was married to Mr. Charles F. Davis on June 5, 1924, at Piermont-on-the-Hudson, N.Y. Mr. Davis was a student at Union Seminary and Columbia University.

Helen Louise Hasseltine (B.S. 1924) was married to Mr. Hal Graves Armstrong, October 27, 1924, at Pasadena, California. Mr. and Mrs. Armstrong are now living at 480 South Euclid Avenue, Pasadena.

ALUMNI NEWS NOTES

Fletcher Harper Swift (Ph.D. 1905) of the College of Education, University of Minnesota, delivered an address on

"Inequalities in Taxation" before the Department of Rural Education of the Nashville Educational Association at its meeting on February 23 in Cincinnati. Professor Swift recently addressed the New Jersey League of Women Voters and the Iowa State Teachers Educational Association on Problems of Public School Finance.

J. Freeman Guy (M.A. 1918) has recently written and published the following bulletins, "Pittsburgh Spelling Survey," Bulletin No. 5 of the Department of Research. This describes a city-wide survey of the spelling abilities of the pupils in the Pittsburgh public schools. It also comprises a study made of white and colored pupils; a study of platoon and non-platoon schools; and an Index Number for determining the relative standing of the various schools. A book entitled, *Pittsburgh Arithmetical Scales*, has just come from the press. It is a discussion of the method of derivation and administration of the Pittsburgh Arithmetical Scales. This publication constitutes the major portion of Dr. Guy's work for the Ph.D. degree at the School of Education at the University of Pittsburgh. A third publication, which will come from the press shortly, is entitled *Pittsburgh Arithmetical Survey*. This survey covers the arithmetical abilities of the children of Pittsburgh in arithmetical speed and accuracy, and measured by the Pittsburgh Arithmetical Scale. It also covers the reasoning abilities of the Pittsburgh children, using "Stone Reasoning Test I." These are all published by the Department of Research.

J. R. Barton (M.A. 1921) is superintendent of schools at Okmulgee, Oklahoma. Mr. Barton went to Okmulgee, after serving seven years as superintendent of schools at Sapulpa.

Thomas H. Homberger (student, S.S. 1922, '23, '24) is superintendent of the city schools at Woodward, Oklahoma.

C. C. Liebler (student S.S. 1921 and 1924) is director of attendance in part-time and evening schools at Okmulgee, Oklahoma.

Kathryn M. Long (B.S. 1906; M.A. 1919) is assistant professor of education in charge of elementary education at the Agricultural and Mechanical College, Stillwater, Oklahoma.

Edward H. McCune (graduate student, S.S. 1922, '23, '24) is superintendent of the city schools at Tahlequah, Oklahoma.

Lucy Helen Meacham (M.A. 1920) is director of primary grades at Okmulgee, Oklahoma.

Cecil Moore (M.A. 1923) is supervisor of primary grades at Sapulpa, Oklahoma.

Mrs. Vera Ida Moore (M.A. 1920) reports, "We have added a new instructor in Mothercraft at the University of Oklahoma, Norman. We have four more rooms and the necessary equipment for them. Baby Mary, a little miss of five months, is making her home at the University practice house this year."

Nora A. Talbot (M.A. 1922) is dean of the School of Home Economics, Agricultural and Mechanical College, Stillwater, Oklahoma.

Mrs. Maud Richmond Calvert (graduate student 1920, '21) is state supervisor of home economics, Oklahoma. Her office is in the Capitol Building, Oklahoma City.

Miriam Gerlach (student S.S. 1922) is dean of women at the University of Oklahoma, Norman.

Mary M. Baird (M.A. 1921) is a teacher of home economics at the University of Oklahoma, Norman. She reports, "I am now mothering the first baby, Mary, in Oklahoma, aided by the senior girls in home economics, each in her turn."

O. W. Grafmiller (graduate student, S.S. 1923 and 1924) is superintendent of schools at Newkirk, Oklahoma.

Coleman C. Daniel (M.A. 1922) is now pastor of the First Methodist Church, Pensacola, Florida. He was formerly president of Birmingham-Southern College.

B. Alice Francisco (graduate student, S.S. 1919, 1924) is head of the Department of Home Economics, East Central State Teachers College, Ada, Oklahoma.

C. W. Gethmann (B. S. 1922) is prin-

cipal of Central High School, Oklahoma City, Oklahoma.

Arthur B. Adams (Ph.D. 1916) is dean of the School of Commerce, University of Oklahoma.

Mary G. Apple (graduate student, S.S. 1924), who is working on her Master's degree, is now in charge of the general and medieval history department in the Senior High School, McAlester, Oklahoma.

M. K. Chauncey (M.A. 1916) is serving his second year as assistant professor of education in the Oklahoma Agricultural and Mechanical College, Stillwater.

Esther Gilman (B.S. 1918) is instructor in physical education and in charge of corrective and individual gymnastics at Ohio State University.

A. W. Rosenthal (M.A. 1919) has been superintendent of the Bronx Young Men's Hebrew Association since September 15. He has published an article entitled "A Program for Sex Education for Boys" in the *Nation's Health*, issue of January 15.

Martha Thomas (B.S. 1916; M.A. 1923) is director of home economics at Hood College, Frederick, Maryland.

Ada M. Field (M.A. 1913) is coöperating with the public health nurse service and clinics in the city in giving students practice in nutrition work with children.

Elizabeth V. Colburn (M.A. 1916) is director of the courses in art education at the University of Vermont. She has written the Vermont state course of study in art.

Marguerite M. Hussey (B.S. 1922; M.A. 1923), professor of physical education, University of Wyoming, reports that they have just moved into a new four hundred thousand dollar gymnasium building. The large gymnasium floor is one hundred by one hundred eighty feet and the swimming pool is one hundred feet in length. The pool itself is of white tile throughout with a most up-to-date refiltration system, ultra violet rays and vacuum-cleaning system. There is a special individual exercise room, a rest room, a recitation room, a small gymnasium and a number of offices.

H. B. Wilson (M.A. 1910) has published two books during the past year: *Modern Methods in Teaching*, Silver, Burdett & Company, publishers; and *Modern School Readers*, Harr Wagner Publishing Company, San Francisco.

R. A. Kent (M.A. 1910; Ph.D. 1917), dean of the School of Education, Northwestern University, is chairman of the committees that are making a survey of the Evanston schools.

Elizabeth Carse (M.A. 1910) is the principal of Northrop Collegiate School, which for nine years has occupied a model building in Minneapolis. It is the largest non-sectarian day school for girls in the Northwest.

Anne M. Nicholson (Ph.D. 1910) is director of field work in connection with the National Council of Catholic Women, Washington, D. C.

G. Anna Fry (B.S. 1920) is assistant professor of education, College of Education, University of Cincinnati. She had a university extension class in Educative Values of Play at Dayton, Ohio, this past semester. It is the first time that the College of Education has sent a representative into this field.

Mrs. Dorak Spingel (M.A. 1920) is president of the Women's League of the United Synagogue in New York City. Her object is to organize and to promote the spiritual and religious walfare of the Jewish people through religious publications and religious classes for children in every part of New York City. She lectures before women's organizations and at students' houses on college campuses.

M. Harriet Bishop (graduate student, S.S., 1921) has been at the State Normal School, Worcester, Massachusetts, since 1912. She is also secretary of the Massachusetts State Normal School Teachers Association, which has a membership of two hundred and ninety persons.

Mordecai Soltes (Ph.D. 1924) is director of extension education of the Jewish Welfare Board, which is in touch with Jewish community centers throughout the country.

Anna Schnieb (M.A. 1918) is professor of education and psychology at Teachers College, Richmond, Kentucky.

Lula O. Andrews (B.S. 1913; M.A. 1914) is associate professor of English, Georgia State College for Women, Milledgeville. During the summer she is professor of English at the University of Virginia.

Rev. A. S. Murray (M.A. 1924) has been appointed headmaster in English and principal of Naparima College, San Fernando, Trinidad, British West Indies. This is a residential high school for East Indian boys.

Sarah Chollar (M.A. 1908) is teaching in the high school at Johnson City, New York.

Daisy Dean Uech (B.S. 1923) has recently been elected chairman of the northern branch of the California State League of Nursing Education.

Sara Kerr (B.S. 1921) is a home demonstration agent in Roosevelt County, New Mexico.

Bertha N. Baldwin (B.S. 1909) has been director of the New York Herald-Tribune Institute since Miss Anne Pierce left. Miss Baldwin has taken over all the food work as food specialist and is devoting much of her time to writing.

Carolyn E. Gunn (B.S. 1921) is dietitian at the Central High School, Cleveland, Ohio.

Elsa Lotz (B.S. 1912; M.A. 1916) has been director of religious education in the First Church of Christ (Congregational) of Northampton, Massachusetts, since September 1, 1924. She was formerly director of religious education at the Spring Street Presbyterian Church Neighborhood House, New York City.

Carolyn Valentine (B.S. 1924) has entered a three-year training course for nurses at Johns Hopkins Hospital, Baltimore.

Isabel Glover (B. S. 1920) has recently accepted a position as director of the Division of Public Health Nursing, Indiana State Board of Health, Indianapolis. She was formerly county nurse in Vermilion County, Indiana.

Helen Wood (M.A. 1924) has been appointed director of the School of Nursing to be opened at the University of Rochester, September, 1925.

Dr. Mary Clune (B.S. 1912) will give two courses in geography at the Summer Session of New York University.

Helen E. Walker (B.S. 1917; M.A. 1924) has entered the University of Buffalo to pursue the medical course. She was formerly a teacher in homemaking at Hutchins High School, Buffalo, New York.

Frances E. Gerber (B.S. 1917) has spent five years in extension work in Maryland. During that time she organized the Frederick County Federation of Rural Women's Clubs, which has grown from two hundred to seven hundred members. She is now supervisor of textiles and clothing at the senior high school, Butler, Pa.

Emma Dolfinger (M.A. 1916) has been made director of the Division of Health Education, American Child Health Association, New York City.

A. Grace Johnson (B.S. 1915) is serving her tenth year on the Oregon State College staff. She started as an instructor and was promoted to professor and head of the household administration department where she has been for the last seven years. She established one of the first practice houses of the western part of the United States, and hers was the second school in the country to care for a baby in the practice house.

Frances M. Hedden (M.A. 1920) is studying at the Auburn School of Religion, Auburn, New York.

Lota L. Troy (B.S. 1920) is in the bookbinding department of the Newcomb School of Art, New Orleans. She will teach designing and bookbinding in the Chautauqua School of Arts and Crafts, New York City, this summer.

Bessie Myers (B.S. 1921; M.A. 1924) has been appointed field worker for the department of Farm and Rural Work under the auspices of the National Council of Jewish Women. Her work covers Alligan, Van Buren and Berrien Counties, Michigan. Her headquarters

are at The Dewey, South Haven, Michigan.

Hazen Chatfield (B.S. 1915) is principal of Public School No. 145, Brooklyn, the experimental school of the 35th district, so designated in 1922. A testing program involving thirty-two classes, 4B-8A, approximately 1550 pupils, was carried out in December, 1922, under the direction of the Bureau of Reference, Research and Statistics. Reorganization of classes the following February was based on results of tests. Further studies in the effects of homogeneous grouping, modified time schedules, modified syllabi and methods have been made and are still in progress.

Florence A. Meyer (M.A. 1909) is acting supervisor of physical education in all corrective gymnastics work in the public schools of Newark, New Jersey.

Stella E. Steele (M.A. 1913) is teaching in the home economics department at Winthrop College, Rock Hill, South Carolina.

Esther H. Alden (B.S. 1920) is home economics supervisor in the Philadelphia public schools. She has recently completed a new course of study in clothing for the 5th, 6th, 7th, and 8th grades. Miss Alden received her appointment in the Philadelphia schools about a year ago. For three years previous to this time, she was home economics instructor at Hollins College, Virginia.

E. E. Frost (B.S. 1914) is a supervisor in the public schools of Irvington, New Jersey.

Margaret Noonan (Ph.D. 1918) has written a volume in the *Texas Survey* on the "Elementary School Curriculum."

Esther L. McNellis (B.S. 1923) is conducting a survey of working girls of metropolitan Boston. She is also county chairman of a committee to reorganize the curricula for the continuation schools of Massachusetts.

Charlotte White (B.S. 1904) is teaching a primary class of crippled children at Public School No. 183, Brooklyn, New York.

Ina Best (B.S. 1915; M.A. 1920) is head of the primary department of the Training School, Iowa State Teachers College, Cedar Falls, Iowa.

Edna Emma Lamson (B.S. 1918; M.A. 1922) is dean of Spelman College, the first woman's Catholic college in this country for the higher education of Negro women and girls. She is also editor of the college paper.

Rachel Meserve (M.A. 1922) is an instructor in foods and nutrition in the College for Women of Western Reserve University.

Louise Clark (B.S. 1902) is county superintendent of one hundred forty-four elementary schools, seven high schools, three junior high schools, and one junior college in Sonona County, California.

Maud Whittock (B.S. 1904) has been for several years supervisor in the Department of Psychology and Educational Research of the Los Angeles City Schools. During the last year she has been instructor in the University of California Extension Division.

Rose C. Grimes (B.S. 1916) is teaching designing at Maryland Institute of Art, and art appreciation at Oldfields School, Glencoe, Maryland.

Julia Detraz (M.A. 1919) left the University of Nevada, where she was assistant professor in education, to accept a position at the School of Education, Cleveland, Ohio.

E. D. Randolph (Ph.D. 1922) has completed his study, *The Professional Treatment of Subject-Matter*. It is published by Warwick & York, Baltimore.

Paul S. Sheehan (B.S. 1915) is principal of the Boys Continuation School and principal of the Knights of Columbus Evening School for Ex-Service Men at New Bedford, Massachusetts.

Charlotte Herckner (M.A. 1923) is teaching industrial arts and history of education at the State Normal School, Glassboro, New Jersey. She was formerly at the State Normal School, Trenton, New Jersey.

Peter Sandiford (M.A. 1900; Ph.D. 1910) has just completed his report of the Testing Program of the British Columbia School Survey. Ten thousand

public school pupils, five thousand high school pupils, and six hundred normal school pupils were each given an intelligence test and seven achievement tests.

Jesse B. Sears (Ph.D. 1920) spoke on "Financing Public Education" at the Montana State Teachers Association meetings in November. He gave a series of five addresses before the Classroom Teachers Association of Minneapolis during the fall.

Jesse D. Burks (Ph.D. 1905) has been appointed director of the Department of Service of the Public Schools of San Francisco. He began his new duties at the beginning of the year.

Bessie Lee Gambrill (Ph.D. 1922), assistant professor of elementary education, Yale University, is directing a study group of the New Haven branch of the American Association of University Women. A study has been made of the individual differences in children and the adjustment of the organization and curriculum to meet those differences. She has also been serving as state education chairman for the same association and the Federated College Clubs. Dr. Gambrill has given recently a series of talks on child psychology to the Mothers' Educational Club.

Roberta S. Sinclair (B.S. 1921; M.A. 1922) is state home demonstration leader in New Mexico.

Marie Gugle (M.A. 1913), assistant superintendent of schools at Columbus, Ohio, gave a talk on "Hambidge's Dynamic Symmetry" at a meeting of the Columbus Mathematics Teachers Club held in January.

At a meeting of the Board of Regents of the University of the State of New York held April 24, 1924, it was voted "That this Board extends its thanks to Miss Grace Kline (B.S. 1923) and Miss Jean Taylor (B.S. 1923), who, out of loyalty to their profession of nursing, have brought to the attention of the Regents, conditions existing in one of the nurse training schools of the State, and have aided substantially in the correction of these conditions."

Herman O. Duncan (M.A. 1923) is now associate professor of education in the Whitewater Normal School, Whitewater, Wisconsin.